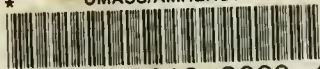


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SIR HENRY GILBERT.

IN our last issue we briefly announced the death of Sir Joseph Henry Gilbert, the able and devoted coadjutor of the late Sir J. B. Lawes, Bart., the eminent authority on scientific agriculture and chemistry. Sir Henry passed away at his residence at Harpenden, at ten minutes past twelve o'clock on Monday morning, the 23rd inst., in the presence of his family.

Sir Henry, who had long been ailing, was first taken seriously ill in August last at Strathpeffer, Scotland, where he had gone for his summer's holiday, being attacked by acute hæmorrhage, followed by nervous exhaustion and neuralgia of the stomach.

Sir Joseph Henry Gilbert was born at Hull, August 1, 1817, and was therefore in his eighty-fifth year, being three years the junior of Sir John Lawes. His father was the Rev. Joseph Gilbert, the author of several theological works. His mother, Ann Taylor, of Ongar, who survived until 1866, was well known as an authoress of poems, writing

originally with her sister under the names of Ann and Jane Taylor.

After his school education, and the loss of several years by a gun-shot accident, which much impaired his health and deprived him of the sight of one eye, Dr. Gilbert commenced his college courses at the University of Glasgow, where he had as contemporaries Sir Joseph Hooker and Dr. T. Thomson, the Indian botanist. Here, as elsewhere, he paid special attention to chemistry, devoting some time to analytical chemistry in the laboratory of the late Professor T. Thomson. He next studied at University College, London, attending the classes of Professor Graham and others, and working in the laboratory of the late Dr. Anthony Todd Thomson. A short time was afterwards spent in the laboratory of Professor von Liebig at Giessen, where he took the degree of Doctor of Philosophy. Returning to University College, London, Dr. Gilbert was class and laboratory assistant to Professor A. T. Thomson in the winter and summer session of 1840-41, and attended other courses at the College at the same time. On leaving college, he devoted himself for a time to the chemistry of calico-printing, dyeing, &c., in the neighbourhood of Manchester.

In June, 1843, Dr. Gilbert became associated with Mr. (afterwards Sir John) Lawes in the Rothamsted investigations, and from that time until his death has been engaged as director of the Rothamsted field and laboratory experiments, which consisted of a systematic series of researches in agricultural chemistry and physiology of animals and plants. In the early part of his career at Rothamsted he was engaged in the manufacture of calomel in an old barn which served as a laboratory. At that time Mr. Lawes sought his services as chemist in some commercial undertakings, but Dr. Gilbert preferred to remain at Rothamsted, and commenced that brilliant series of researches which conferred so much honour on the two investigators. These researches began as "flower-pot experiments," but were gradually extended till they became field experiments on a scale hitherto unattempted.

The Rothamsted experiments may, indeed, be pronounced unique, and are certainly without parallel, either as to extent, character, or scientific and practical usefulness. It is not asserting too much to say that these researches have done more to advance agricultural and horticultural science, and have been and will be of greater service to agriculture than can ever be fully realised. Other countries can boast of very numerous agricultural stations supported by Government, whilst we have very few; but the Rothamsted experiments carried out by private individuals surpass all that has been done in any other country with or without Government aid.

Sir Henry was elected a member of the Chemical Society in 1841, the year of its formation, and was President of the Society in 1882-83. He was elected a Fellow of the Royal Society in 1860, and in 1867 the Council of the Society awarded to him, in conjunction with Sir John B. Lawes, one of the Royal medals. He received the honorary degree of M.A. at Oxford in 1844, that of LL.D. at Glasgow in 1883, and at Edinburgh in 1890, as also that of Sc.D. at Cam-

bridge in 1894. He was Sibthorpian Professor of Rural Economy in the University of Oxford for six years, from 1884 to 1890.

In May, 1893, the President and Council of the Society of Arts awarded the Albert Gold Medal to Sir John Lawes and to Sir Henry Gilbert for their joint services to scientific agriculture, and notably for the researches which, throughout a period of fifty years had been carried on by them at the experimental farm at Rothamsted; and the medals were presented to them at Marlborough House by H.R.H. the Prince of Wales (now King Edward VII.), President of the Society, in the presence of many members of the Council. Like his collaborator, Sir John Lawes, he was an honorary or corresponding member of numerous home and foreign agricultural and scientific societies. On August 11, 1893, that is, about a fortnight after the jubilee celebration at Rothamsted, Dr. Gilbert received the honour of knighthood.

The jubilee of the Rothamsted Experimental Station in 1893 was made the occasion of a ceremonial which was of an unique and interesting character. At a meeting of the Royal Agricultural Society of England, presided over by H.R.H. the Prince of Wales, it was resolved that, to mark the completion of half a century of continuous research in the Rothamsted station, some public recognition should be made of the invaluable services rendered to agriculture by Sir John Lawes and Dr. Gilbert. It was decided that the testimonial should take the form of (1) a granite memorial with a suitable inscription to be erected in the front of the laboratory at Harpenden; (2) illuminated addresses of congratulation; (3) a portrait of Sir John Lawes painted by Mr. Hubert Herkomer, R.A., and a massive silver salver to Dr. Gilbert, bearing the following inscription: "Presented by the subscribers to the Rothamsted Jubilee Fund to Dr. Joseph Henry Gilbert, F.R.S., in commemoration of the completion of fifty years of unremitting labour in the cause of Agricultural Science, July 29, 1893." The various presentations were made, and the commemorative granite boulder was formally dedicated at a meeting of the subscribers held at Harpenden on Saturday, July 29, 1893. The Right Hon. Herbert Gardner, M.P., President of the Board of Agriculture, presided, and there was a large attendance of leading agriculturists, scientists, and others.

The Lawes Agricultural Trust, established by the munificence of Sir John Lawes, provides that someone shall periodically visit the United States of America and give a series of lectures upon the results of the Rothamsted investigations. At the request of the committee of management, Sir J. Henry Gilbert undertook this duty in 1893, and thus for the third time he visited the world beyond the Atlantic, his former visits having taken place in 1882 and 1884.

The results of the Rothamsted researches are embodied in print in many forms in the records of the Royal Agricultural Society, the British Association, the Chemical Society, the Royal Society, the Horticultural Society, the *Society of Arts Journal*, and the Dublin Royal Society. In articles in technical newspapers, and in numerous reports, pamphlets, and letters to the general press, too long for enumeration here, which, as

regards the agricultural history, progress, and literature of the past sixty years are, we may confidently say, to be reckoned among the most remarkable achievements of the century.

It is satisfactory to know that the researches at Rothamsted will be carried on in the future under the direction of the Lawes Trustees.

The funeral of the late Sir Henry Gilbert

NOVELTIES OF 1901.

DURING the past year, as in the preceding one, the hybridist, or novelty-maker, has had a decided advantage over the importer, whose expensive occupation has in a large degree



FIG. 1.—*HELICHRYSUM GULIELMI* VAR. *MEYERI*. (SEE P. 4.)

He was twice married, first in 1850 to Miss Laurie, daughter of Dr. Laurie, who died in 1853; and afterwards, in 1855, to Miss Smith, the present Lady Gilbert; he leaves no issue.

took place at Harpenden on Friday, Dec. 27, and was attended by the members of the Lawes Agricultural Trust Committee, and representatives of many of the scientific societies of the country.

been made unremunerative so far as the bulk of the importations is concerned, by competition with the home-made novelties. Signs are not, however, wanting that plant-collecting abroad, which we have to thank for the many showy

plants and the host of interesting things dear to the heart of the botanist and true plant-lover, will soon again be on a better footing. In the matter of high prices, and prices which have been maintained, if we turn to the Orchids especially, we find that the standard best forms and the "albinos" have always commanded the market better than even the best hybrids. Take, for example, *Cypripedium callosum* Sanderae, *C. insigne* Sanderae, and *C. Lawrenceanum* Hycanum, we have each by multiplication acquiring perhaps something like £2000—a record which in the face of easy production no single plant of a hybrid can attain.

THE ORCHIDS,

as represented by the importations during the past year, have been mainly Brazilian, and the ever-acceptable Colombian *Odontoglossum crispum* has been imported in great quantities, notwithstanding the disturbed state of the country they come from. The spotted forms of *Odontoglossum crispum* have proved the most beautiful and valuable Orchids of the year, the *O. crispum* Pittianum, for which H. T. Pitt, Esq., was offered 700 guineas, reaching the highest estimate of value, although several others reached three figures. So important has the bold of these beautiful *Odontoglossums* on Orchid growers become, that several collections are now almost entirely devoted to them, while in most collections they form special features.

In the famous collection of Sir Trevor Lawrence, Bart., Burford (gr., Mr. W. H. White), considerable accommodation is given the *Odontoglossums*, and of the collection there it may be said that in point of vigour and excellence of flower, they are equal to any in the country. Many fine spotted forms of *Odontoglossum crispum* have flowered at Burford, but the best are *Odontoglossum crispum* purpurascens, which received a First-class Certificate on March 26, and *O. luteo-purpureum*, "Burford variety." Other fine things, new or re-introduced to Burford, are *Dendrobium rubens* grandiflorum, and other hybrids; the yellow *Sophranitis grandiflora* Rossiteriana, the fine *Sobralia Rackeri*, Schomburgkii, Thomsoniana, *Laelia præstans*-bicolor, and among the rare botanical species the very remarkable emerald-green *Acanthes dentiens*, the singular *Stanhopea connata*, *Liparis tri-callosa*, *Mormodes Oberlanderianum*, and various singular *Cirrhopetalums*, *Bulbophyllums*, &c.

Baron Sir H. Schroder (gr., Mr. H. Ballantine) still maintains his magnificent collection as one of the best ever formed. Into it the best procurable are generally admitted, and new things are constantly flowering there. Now and then the inflorescences of such grand and priceless things as *Odontoglossum Pescatorei* Veitchianum, *O. P. Schroderianum*, and some of the rest of the blotched *O. crispum* and hybrids, are sent up to the Royal Horticultural Society, and which often indicate, especially with the two first-named, that out of the thousands since imported, nothing in the same class or anywhere near it has again appeared.

Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), is a steady exhibitor of superb new Orchids. At the last Temple Show, the fine *Laelio-Cattleya* × *Edgar* Wigan, the first of the *L. Digbyana* crosses to show bright colour, attracted much attention; and his *Cattleya Mossiae* dulcis was a remarkable variety. Other novelties have flowered at Clare Lawn during the year, among those exhibited and certificated being *Cattleya quadricolor* variety alba, *Laelio-Cattleya* × *Wilsoniae*, and *Phalenopsis Boxalli*; while

Dendrobium × *Wiganianum*, *Laelio-Cattleya* × *Clytie*, and others, have been recorded.

Norman C. Cookson, Esq., Oakwood, Wylam (gr., Mr. Wm. Murray), who not only grows his fine *Odontoglossums* admirably, but also propagates them with reasonable rapidity, flowered some grand things in the past year, four of the best being *Odontoglossum* × excel-

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood), has been great in *Odontoglossums*, his *O. crispum* Pittianum and his *O. Hallii* Edward VII. being the two best shown during the year in their sections. *O. crispum* Annie, certificated at the Temple Show, is also fine; and *O. c. punctatum* Rosslyn variety, *Miltonia vexillaria* Rosslyn variety, *Cattleya Schroderae* Heatonensis, and *Lycaste Balliae* superba, good things of lasting reputation; *Cypripedium* × *Savageanum* Pitt's variety, a singular form with variegated flowers; *C. × Nellie*, and *C. × Ajax*, a novel hybrid of *C. Chamberlainianum*.

De Barri Crawshaw, Esq., Rosefield, Seven-oaks (gr., Mr. Stables), has made *Odontoglossum*-lore and *Odontoglossum*-culture special studies, and he is continually proving that his researches have not been in vain. Among other fine things certificated to him at the Royal Horticultural Society, or recorded, are *Odontoglossum crispum* Raymond Crawshaw, well worthy of the First-class Certificate awarded, its flowers being fine in form, and the glowing orange-tinted brown of its blotching unique; *O. × Crawshayanum* (Hallii × Harryanum) is a very pretty hybrid, in which both parents are recognisable; *O. × Adriane* Crawshayanum, a finely-blotched flower; *O. × loochristyense* "Mrs. de B. Crawshaw," a fine hybrid of *O. triumphans*, with the same rich colouring as that species, a point which other forms lack; *O. Nevadaense* Rosefieldiense and *O. × Denisoniae* nebula, two interesting forms, the latter especially, as it verifies the original figure, which some considered a doubtful representation; and *O. Lindleyanum* aureum, a pleasing addition, as it nearly completes the chain of yellow forms of brown-blotched *Odontoglossums*. The second Rosefield specialty, *Laelia anceps* varieties, have also been augmented by distinct things, and especially by *L. a. Amesiana* Theodora, an advance on the hitherto best of its section *L. a. A. Crawshayana*.

Captain Holford, Westonbirt, Tetbury (gr., Mr. A. Chapman), maintains the reputation of Westonbirt as the leading Orchid establishment in the West of England, which it has sustained for over half a century. A choice collection of botanical and floral interest used to be the aim; now showy things, both species and hybrids, are acquired and cultivated up to their best. The *Odontoglossums* are specially well grown, and some distinct ones have flowered, the best being *O. × Adriane*, "Mrs. Robert Benson." The latest hybrid *Cattleya* at Westonbirt is *C. × mollis*, var. *Lois*.

Robert Tunstall, Esq., Monkholme, near Burley (gr., Mr. Balmforth), has been steadily acquiring good Orchids for some time past. During the year he received Awards at the Royal Horticultural Society for *Lycaste* × *Tunstalli*, a rosy red-and-white natural hybrid of *L. Skinneri*; *Cypripedium* × *Helei* (bellatulum × *insigne* Chantini), a great beauty, named in honour of his wife; *Cattleya* × *Portia* and the showy *Laelio-Cattleya* × *Haroldiana*, and also showed the clear yellow *Odontoglossum grande* citrinum, Monkholme variety, and the finely-formed *Cypripedium insigne*, Sanderae Monkholme variety, probably a true seedling from the original.

The following best selection from the new or specially developed plants of the season credited to our amateurs plainly show the favour given to the genus *Odontoglossum*. W. Thompson, Esq., Walton Grange, Stone (gr., Mr. W. Stevens), an *Odontoglossum* specialist, showed *Odontoglossum crispum* Quocou Empress, *O. × crispum* - Harryanum roseum; the very fine *O. maculatum* Thomp-



FIG. 2.—SEED-VESSELS OF *WISTARIA JAPONICA*.

(See p. 4.)

lens Cooksoni, a large and finely coloured flower; *O. × loochristyense* Cooksoniae, which might be taken for a large, heavily blotched, yellow-tinted *O. crispum*; *O. × Wilekanum* Oakwoodiense, and *O. × W. Sibyl*, both excellent. Of the famed Oakwood hybrids, further extensions of the remarkable blood-red *Calanthe* × *Oakwood* Ruby have flowered, and *Cypripedium* × *Mrs. Rehder*, Oakwood variety, *C. × Lawrebel*, Oakwood variety, and others.

sonianum; the blotched yellow O. × Willeke-anum Golden Queen, and other distinct Odontoglossums.

Elijah Ashworth, Esq., Harefield Hall, Wilmslow (gr., Mr. Holbrook), secured Awards for *Lælia Jongheana* Ashworthiæ, the finest white *L. Jongheana*; *Cattleya* × Miss Harris, var. "E. Ashworth"; and the remarkable white *Dendrobium* Ashworthiæ from New Guinea.

Richard Ashworth, Esq., of Ashlands (gr., Mr. Pidsley), flowered the finely blotched *Odontoglossum crispum* Rossendale, O. c. Margery, O. × *Adrianæ aureum*, and other good varieties.

J. Leemann, Esq., Heaton Mersey (gr., Mr. Edge), in his fine group of *Odontoglossums* at the Temple Show, secured awards for O. crispum Confetti, O. c. Domino, O. c. Countess of Derby, O. c. The Nizam, and also flowered the finely spotted O. × *Adrianæ Lindenæ*, the richly coloured *Lælia* - *Cattleya* × *callistoglossa magnifica*, and the pretty white *Brassocattleya* × *nivalis*.

George Singer, Esq., Coundon Court, Coventry (gr., Mr. Collier), has for his best of the year *Odontoglossum* × *loochristyense* coundonense, O. luteo-purpureum, Coundon Court variety, *Cattleya Trianaei* Godiva, C. Mossiæ Earl Leofric, C. M. coundonensis, and *Cypripedium* × T. W. Bond, Coundon Court variety, all very handsome and distinct.

R. Brooman-White, Esq., flowered *Odontoglossum* × *Ruckerianum*, Mrs. R. Brooman-White, and other fine *Odontoglossums*.

G. W. Law-Schofield, Esq., produced *Odontoglossum crispum* Beauty, a model flower, and *Cypripedium* × *Mandilæ magnificum*; W. P. Burkinshaw, Esq., of Hesse, showed the bright rose-tinted *Lælia* - *Cattleya* × *Digbyano-Mendeli* Hesse variety; Mrs. Briggs-Bury, of Accrington, flowered *Odontoglossum* × *loochristyense* Fairy Queen, O. × I. King of the Belgians, and O. crispum Charlemagne. Fred Hardy, Esq. (gr., Mr. T. Stafford), produced several pretty hybrid *Dendrobiums*, the forms of D. × *Cybele* being especially fine; also D. × *Staffordi*, a pretty cross of D. Bensoniæ; *Sophro-Cattleya* × Geo. Hardy, Tynesfield variety; *Cypripedium* × *Leeano-Chamberlainianum*, and others. R. I. Measures, Esq. (gr., Mr. H. J. Chapman), was fortunate enough to flower the white *Lælia purpurata* Kromeri, *Cypripedium* × *Unxia superbum*, and other hybrids. W. M. Appleton, Esq., Weston-super-Mare, showed the very pretty and distinct *Cypripedium* × *Rolfei* (Rothschildianum × *bellatulum*).

J. Bradshaw, Esq., of Southgate, from his fine collection of remarkable varieties of *Cattleya labiata*, secured awards for C. l. G. G. Whitelegge, a fine white form; and also flowered other good whites, the blue-tinted *C. labiata glauca*, and the pretty *Odontoglossum* × *Adrianæ Bijou*.

Walter Cobb, Esq., flowered *Odontoglossum* × *Adrianæ Cobbianum*, the darkest in colour which has yet appeared; and during the year *Phaius Warpuri*, now known as *P. tuberculatus*, and a few other new plants by the same collector have been added to our gardens, and a very large number of hybrids and varieties have flowered here and there.

Not a single fine new Orchid, either imported or hybrid, has appeared during the year in sufficient quantity to render it available for gardens generally. Among recently exhibited hybrid *Cypripediums*, C. × Mrs. Alfred Fowler and C. × *salus* Mrs. F. Wellesley are among the best.

(To be continued.)

SOME AFRICAN HELICHRYS.

SOME time since (*Gardeners' Chronicle*, November 10, 1900, p. 334, fig. 103), we had the opportunity, owing to the kindness of Mr. W. E. Gumbleton, of figuring a new species of *Helichrysum* which Professor Engler had named *H. Gulielmi*. The species, as cultivated by Mr. Gumbleton, was not only remarkable for its beauty, but for the locality in which it grew, viz., the mountain of Kilima-njaro, in Central Africa. The genus is abundantly represented in South Africa, in tropical Africa, and in Australia.

In the same paper Dr. Engler mentioned, without describing or naming it, another *Helichrysum* as allied to *H. formosum*. This is supposed to be the plant now illustrated (fig. 1, p. 2). Mr. Gumbleton received the seeds of it from M. Max Leichtlin under the appellation "H. affine formosum." In due time it flowered; specimens were sent to Kew for identification, and were considered by the authorities to be a variety or form of *H. Gulielmi*. Mr. Worthington Smith's drawing was also submitted to Professor Engler in Berlin, who requested Dr. Hoffmann to report on it, which he did in the following terms:—"So far as I can judge from the illustration, the plant may well be *H. Gulielmi*, Engler; but in the illustration the inflorescence is looser; the species varies, however, in this respect, and the influence of cultivation has also to be taken into consideration. In the illustration the hairs look as if they could be pulled off singly, while in *H. Gulielmi* the hairs are soft and shaggy. This appearance may arise from a defect in the illustration."

It seems evident that we have here not a new species, but rather a variety of *H. Gulielmi*. Longer cultivation must determine this point, and if it eventually prove sufficiently distinct, it may be called *H. Gulielmi* var. *Meyeri*, in compliment to Dr. Hans Meyer, who discovered it, and sent the seeds to Mr. Max Leichtlin. Mr. Gumbleton is also the possessor of another species from the same mountain, viz., *H. Newi* (Oliver and Hiern), *Flora of Tropical Africa*, ii. (1877), p. 349.

WISTARIA JAPONICA.

I HAVE grown this fine and free-blooming species for many years trained to a wall, and though it has bloomed each year most abundantly, the plant being literally covered with its beautiful pendulous racemes of white and lilac flowers, many of them 2 feet long, I never saw a seed-pod form on it till 1899, when a single one was discovered when the leaves fell. In 1900 three were found, and this year four, one of them much larger than the others, which is the one illustrated (fig. 2), and which I think must be the normal size of the pod when fully developed. Each pod only contains one seed. I have not yet tested the fertility or germinating power of these seeds, but hope to do so next year. I believe this *Wistaria* has also ripened seed at Kew, and at Mr. Walpole's garden at Mount Ussher, co. Wicklow. W. E. Gumbleton, Queenstown, co. Cork.

ORCHID NOTES AND GLEANINGS.

CALANTHE × TRIUMPHANS.

A FINE inflorescence of a very richly-coloured hybrid *Calanthe*, a triumph of patient crossing and selecting, is sent by the raiser, Norman C. Cookson, Esq., Oakwood, Wylam, Northumberland (gr., Mr. Wm. Murray). It is of the same section as the ruby-crimson C. × *Oakwood Ruby*, and the purplish-crimson C. ×

atro-rubens, both raised by Mr. Cookson, who gives the following information about the new variety sent:—

"It is the fifth generation by selection from *Calanthe vestita rubro-oculata* × C. × *Veitchi*. It is in the way of C. × *Alexandri*, but much better, and a much more robust grower."

The many flowered inflorescence has flowers in which the lips have a strong resemblance to those of C. *vestita*. The upper sepal and petals are dark purplish-crimson; the lateral sepals are similar to them in colour, but with more or less white showing on the outer halves; the lip is ruby-red, with a dark claret-purple blotch at the base. It is a very showy addition to a class of winter flowers which Mr. Cookson has done so much to enrich. J. O'B.

SOPHRONITIS GRANDIFLORA COCCINEA.

A very finely-formed and large flower of a rosy-scarlet tint, is sent by C. R. de la Salle, Esq., Enbridge Lodge, Newbury (gr., Mr. G. Ellwood), who remarks on its resemblance to the variety known in gardens as *S. grandiflora rosea*. But that variety appears as an occasional plant out of importations of the scarlet-flowered species, whereas Mr. de la Salle's plant is but a more rose-coloured variety of the section, which has more crimson flowers, and has been named *S. coccinea*, although experience has proved the variability of *S. grandiflora*, and "coccinea" and *militaris* are now placed as varieties of it. *S. grandiflora* is one of the brightest of Orchids of small growth, and when it is hung up in a cool-house they make a fine show when there are not many other brightly-coloured blooms open.

CYPERORCHIS MASTERSII AND VARIETY ALBA.

Flowers of varieties of *Cyperorchis Mastersii* are kindly sent by Mr. J. W. Moore, Cragg Royd Nursery, Rawdon, Leeds, who calls attention to their dissimilarity. This peculiarity was noted in the *Gardeners' Chronicle* by Reichenbach, under the old name *Cymbidium Mastersii*. "There is great pleasure felt in England now about that lovely *Cymbidium Mastersii* with purple, or violet, or mauve spots or blotches on the anterior lacinia of the lip. The most enthusiastic lover of the plant compared it to *Lælia anceps Dawsoniana*. That is a question of taste. I have several correspondents who grumbled (in the bad month of November) that the 'variety' had no especial name."

"I am sorry I cannot follow that order, as, *candide lector*, very many names are proscribed. A glance at the two oldest representations (Lindley, *Bot. Reg.*, 1846, 50, and Lindl., *Paxton's Flower Garden*) afford evidence that those were blotched with purple, or mauve, or violet; hence the second variety, now regarded the 'old one,' because the oldest is forgotten, with white flowers, and only yellow on the middle lacinia of the lip and keels, might be distinguished as *C. Mastersii album*." The fine spotted flower sent by Mr. Moore appears to be the form once described as C. *affine*, and the pure white flower with yellow keels is identical with that for which the name *album* was suggested. The varieties of *Cyperorchis Mastersii*, with their fine arching racemes of fragrant flowers, produced in winter, are very desirable plants for the cool or intermediate-house; and even when not in flower, their elegant evergreen foliage makes them ornamental plants.

CATLEYA × ELVINA (TRIANÆ × SCHILLERIANA).

This hybrid, raised by Messrs. Veitch & Sons, Chelsea, bears much resemblance to C. × Miss Harris, which was raised from C. Mossiæ × C. Schilleriana, and consequently it is an affinity of the fine C. × Miss Harris var. *E. Ashworth*, which appeared as a sup-

plement in the *Gardeners' Chronicle*, May 11, last year, although the flower kindly sent by Messrs. Veitch is not so large as that one, the plant being of smaller size. The sepals and petals are of a delicate lilac-rose, with a thickened silvery band running up the middle of each, and a few purple spots. The lip is of a bright rose-purple with darker purple veining and a white margin to the fringed front-lobe—a pretty flower. In these hybrids of *Cattleya Schilleriana*, that species is distinctly apparent in the form of the lip. In *C. × Elvina* the sepals and petals are those of *C. Trianaei*, but rather narrower, and of more substance, but the lip, though much larger, closely approaches that of a good *C. Schilleriana*.

LÆLIO-CATTLEYA × VESTA (*C. SUPERBA* × *L. VITELLINA*).

Lælia × vitellina, for which Baron Sir H. Schroder, The Dell, Egham (gr., Mr. H. Ballantine), received a First-class Certificate at the Royal Horticultural Society in 1893, and which was illustrated in the *Gardeners' Chronicle*, March 25, 1893, p. 365, is a supposed hybrid between *Lælia harpophylla* and *L. Perrini*, with flowers of an Indian-yellow tint. Messrs. Jas. Veitch & Sons succeeded in crossing it with *Cattleya superba*, and named the progeny *L.-C. × Vesta*. The sepals are lanceolate; the petals narrowly ovate-acuminate, and both of a bright copper-tinted orange colour. In all hybrids of *C. superba* the peculiar form, and rather hard substance, of its labellum are transmitted in a marked degree, the present case being no exception. The base, side lobes, and centre of the lip are of an orange colour, which extends as lines into the rosy-purple front lobe, which has an undulate, whitish margin. The tips of the side lobes of the lip are turned back, and are rose-tinted. It is novel in shape and pleasing in colour. James O'Brien.

A HANDSOME HARTSTONGUE.

WE reproduce a photograph (fig. 3) of a frond of *Scolopendrium* var. *Drummondæ* *superba*, recently exhibited by Mr. Chas. T. Druery, and which obtained an Award of Merit from the Floral Committee of the Royal Horticultural Society. As will be seen, this variety is characterised not merely by the plumose or crispum frilling peculiar to some of the more charming varieties of this species, but is also furnished with a deeply-cut, lacy-looking, curly fringe, adding greatly to its ornate character. It originated as a seedling from *S. v. crispum Drummondæ*, found wild many years ago by Miss Drummond, near Falmouth, and was given with a few others in a very small state to the exhibitor by Mr. T. Bolton, of Warton, near Carnforth. The parent is a unique Fern in several respects, having two forms of frond—smooth-edged ones, long and slender, slightly frilled, and terminating in a spreading ramose tassel; and others of similar shape, but with edges projecting into filaments forming a stiff fringe. These filaments suggested to Mr. Druery a tendency to apical apospory, or the development of prothalli from the tips—an idea which was fully confirmed when portions were placed under close culture. In the improved variety the dimorphic character is eliminated, no smooth-edged fronds appearing, while the fimbriate and plumose character is developed on a far greater scale. To bring out the full features, close culture in a Wardian-case or large bell-glass is essential, since it has been found that the tips are so sensitive to drought that during the hot weather, despite every precaution, they wither and turn brown, even under glass in a fernery; hence, though

strong or robust plants result, the ultimate delicacy of the fringing is lost. This remark applies, of course, to culture near London, but probably in the more humid counties of the west and north-west, the difficulty would disappear. The beauty of the Fern, however, entirely justifies Wardian-case culture, and as a central specimen plant, surrounded by other smaller-growing varieties, such as *Spleenworts*, or dwarf forms of other species, would constitute a group which would well repay the little trouble entailed. A north window, with ample light, but little direct sunshine, could not be occupied to better



FIG. 3.—*SCOLOPENDRIUM* VAR. *DRUMMONDÆ* *SUPERBA*.

advantage. So treated, this Fern, besides developing its curly fringe, develops also prothalli at the tips, enhancing the effect, and rendering it additionally interesting to the botanist as well as the non-scientific amateur.

A MIDLAND GARDEN.

I HAVE read recently a capital article on "The Garden, and its Development," in a book which I fear is not likely to be seen by many English gardeners. It is the *Annual Report of the Smithsonian Institution of Washington, U.S.A.* This important institution is liberally supported by the United States Government, and it issues every year a report of its operations, finances, &c., with an "Appendix" of some 500 pages, containing a

number of articles by first-class authorities on the burning questions of the day in physics, natural history, archæology, astronomy, and other branches of science, illustrated in the most elaborate manner with photographs, woodcuts, diagrams, &c. This volume is presented annually to most of the scientific institutions and free libraries throughout the world, but the great value of it does not seem to be generally known in this country. The United States Government is noted above all others for its liberality in giving away free copies of its most valuable publications wherever they are likely to be useful.

THE WHITE HEATHER.

There is a popular superstition that it is lucky to find a spray of White Heather. Of the three common forms of Heather only two occur in Leicestershire, viz., the Cross-leaved Heath (*Erica tetralix*), and the Ling (*Calluna vulgaris*), and of both of these the white variety is occasionally found. I have always supposed that the plant bearing white flowers was a true variety, and would always bear white flowers. My daughter, who has lately returned from the south of France, has brought me a branch of the purple Heather (*Erica cinerea*), which has on it two spikes of flowers, one entirely white and the other entirely purple. It appears, therefore, that both may grow on the same plant. She tells me that the French people believe that the Heather bears white flowers when it grows old.

THE COLOURS OF FLOWERS.

Has there ever yet been discovered a blue Rose, or a blue Poppy, or a yellow Campanula? It has long been noticed that in the flowers of certain genera there may be all shades of yellow, red, and purple, but no blue; while in others there may be all shades of blue, purple, and crimson, but no yellow. Fifty years ago, when it was supposed that the three primary colours were red, yellow, and blue, it was thought that the two primaries, yellow and blue, represented two extremes, which could either of them blend with the other primary, red, producing various intermediate shades, but that if they blended with each other they could only form a compound-green. Scientific gardeners of those days made out lists of plants which might be grown together because their colours would harmonise on these principles. It is now known, however, that if there are any colours which can be called primary they are dark red, dark green, and dark violet. Yellow is a compound of green and red. Blue is a compound of green and violet. Anyone can prove this by a careful manipulation of two prisms, so as to make the coloured spectra cross each other. It is the blending of green with violet on one side that produces the blue series, and the blending of green with red on the other side that produces the yellow series. It is difficult to make people believe that green and red make yellow, or that yellow and blue do not make green, because they are more accustomed to the blending of paints than of pure-coloured light; and the colours of paints are always impure, but the two prisms show it clearly enough, or two strips of white paper looked at through a single prism will show it equally well.

FAVOURITE FLOWERS.

A favourite flower of mine is the old-fashioned *Fraxinella*, which I rarely see in gardens now. It bears spikes of white or rosy flowers, and when slightly rubbed, gives off a rich, aromatic scent. It always associates itself in my mind with the hot and sunny days of summer, "when all the garden paths are warm and fragrant." A dry, sunny border

suits it best, and in such a situation it modifies the midsummer heat with its Lemon-like aroma. I suppose everybody who cares for his garden has his favourites among the flowers; something in the colour or the form or the expression pleases him, or reminds him of some "golden days," that are gone for ever, or of some long-lost friend for whose sympathy he sighs in vain. I have still a spray of Heliotrope which once in the dim past whispered "I love you," and through all these many, many years I have never met that fragrant flower without a friendly recognition, and a feeling as if it had still some message for me. The pretty purple alpine, *Saxifraga oppositifolia*, carries me always to the summit of Ben Lomond on a cloudless summer evening, with all the mountain-land of Scotland spread around me like an embossed map. The Almond-tree and the White Broom remind me of my father's garden as I remember it nearly seventy years ago. All of us have some such memories, and they are treasures to be thankful for.

A PROLIFIC DAMSON-TREE.

There is one large Damson-tree in this garden, and we find the only practical way of getting the fruit is to shake it down, spreading large cloths underneath to keep it clean. When this was done last year, we collected from this tree just about 100 lb. of fruit, and as five of them weighed 1 oz. on an average, there were 8,000 Damsons on that tree. The retail price of Damsons here is 1d. per lb., or 8s. 4d. for the 100 lb. If the lot were worth 5s. wholesale, and the tree occupied or made useless 10 square yards of ground, it would have produced 6d. per square yard, which is the standard at which allotment gardeners should aim.

THE WORK OF A PLANT.

An astonishing plant is the Giant Sunflower. I had a number of them 8 feet high, with stems an inch thick, and leaves and flowers 12 inches across. What a mass of organised tissue to be produced in six months from one single seed! If the plant went on growing at full speed night and day without intermission, it would be necessary for many cells to be formed in each second of time in order to build up such a fabric. And yet how silently and unobtrusively the work is done! Does the busy protoplasm know what it is doing, or what it has got to do? Does it enjoy its life, and sing at its work? and are there any creatures sensitive enough to hear it? Do not laugh, my practical brother gardener, at such fancies. Let us not forget the poetry of the garden while we dig up the Potatoes.

SPIDERS AND THEIR WEBS.

In the misty mornings of the declining year came the wonderful revelation of the spiders' webs. Spread out in thousands on bush and hedgerow, they are all unseen till the mist hangs liquid diamond-dust on every thread. Then suddenly we realise that we are surrounded by a huge population of spiders. I calculate that there must be 50,000 of these webs in this garden, each inhabited by a pair of spiders. They are chiefly of three genera, viz., *Epeira*, the geometric spiders, who spin the beautiful lace-like webs, and often sit in the centre watching for their prey; *Theridion*, spiders whose web is a mass of interwoven threads; and *Linyphia*, whose webs are like sheets suspended horizontally by the edges. Near to each web, and generally on the under-side of a leaf, may be found the spiders' refuse-heap, consisting of the wings, legs, and fragments of the bodies of the flies which have been captured and sucked dry. If each of the 100,000 spiders destroyed only ten flies in the course of the season, it would mean that without their presence we should have

had a million more of these little buzzing pests. I am disposed to regard spiders as friends of the human race. Flies I abhor. It is said, however, that the female spider is larger than the male, and more ferocious, and that when her partner ceases to please her, she simply eats him and gets another. I am bound to say that I think this a bad example. F. T. Mott, F.R.G.S., Birstal Hill, Leicester.

The Week's Work.

PLANTS UNDER GLASS.

By J. C. TALLACK, Gardener to E. MILLER MUNDY, Esq., Shipley Hall, Derby.

Codiciums (Trottons).—Where tall, single-stemmed plants are needed for grouping with other things during the late summer and autumn months, propagation should at once commence, and the method employed should be that of "ringing" the stems of nice, clean tops of shoots as low down as possible without including any bare stem or defective leaves in the portion left above the ring. Enclose in a fairly large mass of sphagnum or other moss, which should be tied closely into place, and kept damp until sufficient roots have been formed to allow of complete severance preparatory to potting. The value of this method of propagation lies partly in the facility with which big plants can be obtained quickly, and partly in being able to keep them always well up to the light, which is impossible with cuttings taken off in the usual way and put into a propagating-box or handlight.

Ixoras.—These, too, may be propagated now, if cuttings are available, striking them singly in small pots in a bottom-heat of about 80°. Any old plants intended to be brought into flower six months hence should be pruned into shape, cleansed thoroughly, and afforded for a few weeks a somewhat drier atmosphere and less water at the root than they require when in full growth. Too much importance can hardly be laid on keeping the plants free from insect pests, which are the cause of much injury.

Gardenias.—A careful watch should be kept on any plants now showing buds for the shoots which show immediately round each bud, which must be removed, for if this be not done, the flower-buds will probably succumb, and the plants will grow on and form a later and probably less useful set of flower-buds. Plants in bud may be afforded manure-water occasionally, and plenty of sunlight and bottom-heat, the latter being very essential to plants flowering in winter.

Carnations.—The propagation of winter-flowering Carnations must go on as rapidly as suitable shoots are formed, the actual time of propagation not being so essential as the proper sort of cuttings, which should be small side-shoots some 3 inches long. They may be struck singly in small pots, or several placed round the sides of larger ones; shallow boxes, too, may be used for the purpose, if the plants are to be grown in quantity. The main point to observe is that there shall be a good bottom-heat in the bed—80° to 85°—on which the pots and boxes are to be stood or plunged, and a much lower overhead temperature, so that roots may form while the tops are at a standstill. Some gardeners advocate striking the cuttings two months hence in preference to the present time, but my experience is that we cannot get the plants as big as they should be if we propagate late, and this must be left to growers more favourably situated as to climate.

Forcing Plants.—Most of these can now be forced easily, the more difficult part of the season being over. Shrubby plants, such as Azaleas, Deutzias, Staphyleas, Lilacs, Gueldres Roses, &c., should be put in an intermediate temperature at first, and be well and frequently syringed with tepid water. A fermenting bed of leaves will be a great help to them. In forcing future batches of Lily of

the Valley, ordinary crowns should be substituted for the retarded crowns, so useful at an earlier date.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bickton, East Budleigh, Devonshire.

Fruit-tree Planting.—Although details for this operation were rightly given in these pages early in November last, circumstances may have prevented the cultivator from carrying them out. Should such be the case, the work may still be performed providing the weather is not wet or frosty, deferring the necessary pruning of such trees for some weeks. Opinions vary as to the usefulness or otherwise of mulching newly-planted fruit-trees, and while favouring this practice, especially in districts where severe frosts are experienced, I think this is often carried to extremes. A mulch of strawy manure, 2 to 3 inches in thickness, placed over the soil as soon as the trees are planted cannot but be of some service where the roots have recently been curtailed, and they are unable in consequence to seize upon the soil before all growth is checked. This mulch should be removed as soon as severe frosts are past for the season, and the soil lightly broken up with the fork to the depth of 3 inches, so that sun and air may act upon it.

Pruning Orchard Trees.—Even now, after much advice given for years by the County Council horticultural experts, pruning is sadly neglected in this county, but surely fruits finer, better quality, and colour, are obtainable when the sun can shine into the crowns. In pruning neglected trees, the crown should be kept fairly open, and branches which cross each other removed entirely, not perhaps all at once, but in the course of two or three years. All dead wood should also be cut out; cuts on living branches, if made with a saw, should have the surface smoothed with a knife or chisel, and if large then painted over with Stockholm tar. Some varieties are prone to push up a quantity of shoots from the centre, which should be shortened to the second or third bud, or entirely removed, otherwise a crowded head will result. Should there be much moss or lichen on the bark, scrape it with a painter's knife, using care in so doing not to injure the bark; then follow this with a bast scrubbing-brush, and lastly, painting the same with a mixture of soot and lime that has been passed through a fine-meshed sieve, and syringe the mixture on to the smaller branches, choosing a fine, calm day for the job. Trees that are to be grafted with other varieties may have their limbs sawn off at points a few inches higher than those at which the grafts will be inserted later on. Be sure that such trees are free from canker, and are vigorous in growth. Shoots for making scions should now be secured, selecting them from healthy young trees, and taking, whenever possible, those of the previous year's growth. Tie these in bundles of about a dozen, fasten a label with the correct name on each, and lay them in 3 inches deep in the soil on the north side of a wall.

THE FLOWER GARDEN.

By R. DAVIDSON, Gardener to EARL CADOGAN, Culford Gardens, Bury St. Edmunds.

Early-flowering Shrubs.—Plants of *Chimonanthus fragrans grandiflora* on walls are now opening their deliciously fragrant flowers, and during severe weather some protection must be afforded, in order to prevent injury to the blooms by frost and cold winds. The same care should be extended to *Jasminum nudiflorum*, for where cut flowers are in much request, the golden masses of bloom of this plant when in good condition are much appreciated. The plants of *Lonicera fragrantissima* growing against a south or other warm wall, are likewise developing their sweet-scented flowers, and the necessary protection of these will, later on, well repay the gardener.

Summer-bedding Plants.—Where varieties of bedding Pelargoniums, Marguerites, Gazanias,

&c., have been wintered in cold frames, let them be forthwith removed to a Peach-house or vinery in which forcing has begun, and where the plants may gradually begin to grow. A careful estimate should be made of the different kinds and varieties of plants employed in bedding, so that a sufficient number of each may be obtained. Lobelias, Alternantheras, and Iresines should have considerable care bestowed on them, and they should not at any time be allowed to get dry or excessively moist at the root, this being very detrimental, Lobelias especially being kept, if anything, rather on the dry side, and in a position near to the glass, in a house having a temperature of 55°. Alternantheras and Iresines are the better for a temperature of 65° to 68°, and in sunny positions quite near to the glass.

Hints on Work in General.—In the pleasure-grounds something may be done at the present time in cutting off and collecting all dead branches that are conspicuously unsightly on Laurels, Hollies, Aucubas, Yews, &c., and if any of the trees are lacking symmetry, this may be remedied by regulating the branches, and fastening them with strong tar-twine or galvanised wire where the necessity exists. Do not, in doing this, bend or strain the branches unduly, or the results may be disastrous. Sweep up tree-leaves that may have got blown on to the paths and the margins of shrubberies and borders. Where alterations are in prospective, such as the extending or widening of the garden paths, materials should be obtained so that the work once begun can be rapidly completed. An ordinary path intended for pedestrians or light wheel traffic, need not be more than 18 inches deep, and in dry soils 9 inches is sufficient. The excavation may be filled with brick-bats, chalk, rough stones, &c., to within 4 inches of the surface, and the remainder completed with suitable gravel as soon as practicable after the return of mild weather. Where existing borders of trees and shrubs are to be made larger, the additional ground should be manured and trenched, and allowed to settle before the trees and shrubs are planted. Recently-planted clumps of herbaceous perennial plants should have sufficient mulching material placed over or round about them as will protect from frost, especially *Eremurus robustus* and *hyalaicus*, *Incarvillea Delavayi*, *Anthericum*, and *Paeonies*.

THE KITCHEN GARDEN.

By T. TURTON, Gr. to J. K. D. WINGFIELD DIGBY, Esq., Sherborne Castle, Dorset.

Ordering Seeds.—What gardener at one time or another has not experienced a drawback by not having received his seeds in time to take advantage of the ground being in the right condition for sowing for early crops? I cannot, therefore, urge too strongly the procrastinating gardener to send his order to the seedsman with as little delay as possible, for although at the date of writing prospects of seed sowing in the open ground cannot be thought about; directly the days begin to lengthen, and if only a short spell of open fine weather prevail, much advantage may be gained by sowing seeds, which I shall mention in future calendars.

Order of Cropping.—If not absolutely necessary to insure success with the various crops, it is at least a great assistance to any gardener with many other matters upon his mind to have a fixed rotation for the several quarters into which the majority of kitchen gardens are divided, but more especially for the principal crops, chief amongst which are Peas. For early Peas, the most suitable place is a south border, and where two such borders in a garden can be set apart, as here, it is my practice to plant in alternate years with early Potatoes. When for early Peas, the border is deeply trenched, placing a good dressing of rotten dung at the bottom of the trenches, and the following season a good dressing of well-rotted dung is simply deeply dug in for the early Potatoes. The main crop of Peas is sown where the Celery has been grown, and exactly over the trenches, without any further

preparation of the land beyond levelling it, marking the Celery trenches previous to so doing. Savoys, winter Turnips, &c., follow the Peas. After the above-named crops are cleared off, part of the quarter is heavily manured and trenched for Onions, the other portion being simply dug over for the various root crops. The earliest-sown Cabbage follows the Onions in the autumn, and when the roots are all cleared off, the remaining portion of the quarter receives a good dressing of well-rotted dung, and is then bastard-trenched, and planted with an early kind of Cabbage, which succeeds the autumn-planted ones, the stumps being always cleared off as the heads are cut, and the whole quarter planted with Brussels Sprouts.

THE ORCHID HOUSES.

By W. P. BOUND, Gardener to J. COLMAN, Esq., Gatton Park, Reigate.

Temperatures in the various houses.—Temperature is a most important factor in the successful cultivation of Orchids, and at no time of the year is a greater amount of discretion needed than the present, in order to keep the plants in a healthy state. The outside thermometer must be carefully watched, as, for example, a temperature, say, in the Cattleya-house one day of 68° or 70° would be quite right, but a similar degree of warmth the next day would be quite wrong. I consider that any hard-and-fast rule by which the temperature of a house should always be of this or that degree at any given time of a day, is unsuited to the requirements of the plants. In order to maintain as near as possible the ideal temperature of an Orchid-house, one must be entirely governed by the outside temperature. On all occasions let some air in by the lower ventilators, and this should never be taken off entirely unless the wind is very cold, or there is severe frost. For the present, the temperatures may run as follows, taking the reading of the outside thermometer at night 40°; in the morning 36°; and at noon 50°:—

| | Night. | Morning. | Noon. |
|----------------------|--------|----------|-------|
| Stove Orchid-house, | 68° | 65° | 72° |
| Cattleya-house, | 63° | 60° | 68° |
| Intermediate-house, | 60° | 57° | 65° |
| Odontoglossum-house, | 52° | 50° | 55° |

During severe frosty weather the temperatures should be reduced about 5° all round, and the plants and houses kept on the dry side. I strongly advise at such times the use of the roof blinds and the covering of the side lights in order to curtail as much as possible the use of fire-heat, and thus do no harm to the plants.

Miltonias.—Most of the autumn-flowering varieties, viz., *M. Clowesii*, *M. candida spectabilis*, *M. Regnelli* and the hybrids of these species, *M. leucoglossa*, *M. Binotii*, *M. Bluntii*, *M. Joiceyana* and others, are now pushing out their new growths and roots; if re-potting or top-dressing be necessary, this is a very suitable season for carrying out such work. Do not pot or disturb them till they are ready, then the young roots will take hold of the new compost before it can become soured. The compost may consist of turfy peat $\frac{2}{3}$ well chopped to pieces, and chopped sphagnum-moss $\frac{1}{3}$; the whole being well mixed together. I prefer to use bracken-roots taken out of the peat as drainage material, chopping them up a little so as to get them down to the bottoms of the pots without having to squeeze them much. The pots should be half filled with bracken-roots, and the potting done rather firmly, keeping the base of the plant a little below the level of the rim of the pot. I do not advise re-potting being carried out unless the plant really needs it; and if the plants were well potted last year, surfacing will be sufficient. I advise surfacing them so that the young roots that are thrown out with the young growth can at once find fresh compost of which to take hold. After potting, afford water very carefully, affording it only when the compost is dry, until the roots have seized upon the new compost and the young growth more advanced; afterwards water may be freely applied. Let the pots be damped at

the sides, this being of great benefit at this season, and as soon as the days get longer and we have more sunshine they are greatly benefited by over-head syringing, and if the house is properly ventilated no one need be afraid of using the syringe freely overhead.

FRUITS UNDER GLASS.

By JAMES WHYTECK, Gardener to the DUKE OF BUCCLEUCH, Dalkeith.

Pot Vines.—Where very early crops of Grapes are desired, forcing Vines in pots is the best and most economical method. Excellent instructions have been given in quite recent numbers of this Journal for the preparation and starting of these Vines, and they are now in active growth. The present season is not favourable for early forcing, as there has been little sun and much fire-heat that has had to be employed. If the Vines are plunged in a bed of warm leaves, it will be very helpful to growth. Avoid very hot pipes on cold nights; a mean temperature of 60° will do for Hamburgs, and even less on a very cold night. As they approach flowering, and weather permits, give a mean temperature of 65°, rising 10° in the daytime, or more with sunshine; and where no provision is made to warm the admitted air in cold weather, the ventilation must be arranged very carefully in the forenoon, conserving sun-heat soon after midday so as to run the warmth up to 80° or higher. Stop syringing when the Vines are in flower, but avoid a dry, arid atmosphere by damping the paths frequently; and if the Vines were top-dressed before starting with vine-manure and fresh soil, give the roots clear warm water as they require it till the fruit is formed and swelling, when weak and frequent warm manure waterings may be given. Early forced planted-out Vines that were forced early in the previous year, and started at the beginning of last month, will now be making growth. If a bed of leaves mixed with a very little stable-dung is put inside the house, and turned over occasionally, it will hasten a natural, healthy growth; and with medium fire-heat, the houses should be kept about 60° at night. It may be 2° or 3° less on very cold nights rather than have excessive fire-heat. When they flower, raise the temperature if possible to 65° at night, and 10° to 15° higher in the day, according to the weather. Try to change the air daily in the forenoon. Do not be in a hurry to disbud and tie down the shoots, but wait to see which shoots promise best for fruit. If any shoots press against the glass, bring them slightly away from it, and day by day gradually bring them down to their proper place. The overcrowding of Vine-roots and laterals is a mistake. The rods may be 4 feet apart; the laterals should extend two or three joints beyond the bunch. Encourage all the growth possible on early forced Vines. Remove surplus bunches, reserving the best, but avoid over-cropping. If the border was top-dressed with vine-manure at starting, warm water afforded when the Grapes are set will be sufficient at the present. The next vinery, to yield Grapes in June, should be started at the beginning of the present month. The house having previously been thoroughly washed down, the Vines should be cleared of loose bark, and washed thoroughly as advised in a former number. If the border is dry, it should be well soaked with warm water. If the Vine-roots in the border are right, they will be a close network on the surface, and only the merest loose surface need be removed, after which apply a good sprinkling of bone-meal, and the same of Thomson's vine-manure; on the top of that put 2 inches of finely-cropped fresh soil, finishing with a dressing of short horse-manure. The outside border is better for being covered with a foot of leaves thatched with straw. The night temperature, according to the weather, may be kept at 50° to 55°. 10° to 15° higher in the day, till the buds begin to break. Syringe daily more or less, according to the weather. Avoid keeping the Vines constantly wet; damp occasionally by day to counteract aridity from fire-heat.

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.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

SALES FOR THE WEEK.

MONDAY, JAN. 6.—Perennials, Bulbs, &c., by Protheroe & Morris, at noon.
TUESDAY, JAN. 7.—Bulbs, &c., by Rendell & Searle, 12.30.—Orchids and Stove Plants, Beechen Cliff Villa, Bath, by Fry & Asprey, and on Jan 8.
WEDNESDAY, JAN. 8.—Lilies, Shrubs, &c., by Protheroe & Morris, at 12.—Bulbs, Palms, Shrubs, &c., at Stevens' Rooms, 12.30, Lilies at 2.30.
THURSDAY, JAN. 9.—Blackberries, Bulbs, &c., by Protheroe & Morris, at noon, Orchids at 12.30.—Bulbs, &c., and on Friday, Rendell & Searle.

TENDERS.

Purchase of Turf, Tooting, London County Council, Spring Gardens, S.W.
(For further particulars see Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick—36° 3'.

ACTUAL TEMPERATURES:—

LONDON.—January 1 (6 P.M.): Max. 54°; Min. 48°.
January 2.—Fine; mild; moist.

PROVINCES.—January 1 (6 P.M.): Max. 53°, S.W. Ireland: Min. 35°, Shetlands.

OUR American cousins are now much exercised in their minds as to what flower they shall adopt as a national badge. The discussions have been long and varied. Even now, no conclusion has been definitely arrived at. The same question has turned up here in connection with the Coronation ceremony next June. We should not have thought that there was room for any dispute on the subject. The Rose has been for centuries so entwined with our history that we should have supposed no other flower could have been budded on a British stock. The Rose is said to have been the badge of EDWARD I. in the thirteenth century; in 1397 JOHN OF GAUNT bequeathed to the altar in St. Paul's his coverlet of cloth of gold sprinkled with golden Roses. We had thought it possible that on one or more of the numerous shields on the tombs of the BLACK PRINCE and of HENRY IV. in the Cathedral at Canterbury, a conventional representation of the Rose might have been found. Through the courtesy of the Dean, we are enabled to say that this conjecture is erroneous, and that neither on the tomb of the BLACK PRINCE, nor on his hauberk still preserved in the Cathedral, is there any representation of a Rose. Its connection with the houses of Lancaster and of York is, of course, known to all of us, and was forcibly recalled to mind last summer when a Rose show was held in the historic Temple Gardens. In Tudor times the Rose was constantly used as an architectural adornment, and may still be seen at Westminster, and many a similar fane.

From this point of view it is interesting to quote what EVELYN, writing in 1679, says: "For even the very Damask Rose itself, as my Lord BACON tells us, Cent. 2, Exp. 659, is little more than an hundred years old in

England." Compare this with what is said by PARKINSON, writing, in 1629. PARKINSON mentions thirty sorts in his garden, everyone notably differing from the other.

But when the Rose was adopted as a national emblem, Canada, Australia, Tasmania, and New Zealand had not been discovered; and—except in Canada—there is not a native Rose in either colony; nor is there in any part of South Africa, the West Indies, Mauritius, or Ceylon. Half the British Empire then has no Rose unless by introduction.

When we get a federated Greater Britain, it is clear we shall have some difficulty in fixing upon a flower that is common to all the component elements. This being the case, it will be best to disregard points of geographical distribution as pedantic in the circumstances, and to fall back on the old

The Red Rose on the back is plac'd
Thereon a crown of gold;
The White Rose on the breast is brave
And costly to behold;
Bedeck'd most rich with silver studs
On coat of scarlet red;
A blushing hue, which England's fame
Now many a year hath bred."

The warders of the Tower still wear tunics embroidered in the manner here described.

But in spite of the claims of long descent on the part of the Rose, a claim is set up in some quarters for the Iris, which some say is the Fleur-de-Lys. Unfortunately for this contention, it is not yet settled whether the device is really intended to represent an Iris, a Lily, or a spear-head!

Again, Fleur de Louis is considered to have been the original name, and this has been converted into Fleur de Luce, Fleur de



FIG. 4.—BASAL PORTION OF THE GREAT CEDAR AT ADDINGTON PARK.

(See p. 10, and our Supplementary Illustration. From photographs by J. Gregory.)

heraldic, conventional Rose as the floral badge for the whole empire.

The Hon. Mrs. BOYLE, in her charming *Ros rosarum*—*Dew of the Ever-living Rose*, cites from an old ballad some lines, which are so appropriate to the occasion, that no apology need be offered for quoting them. Alluding to the White Rose of York and the Red Rose of Lancaster, the ballad proceeds:

"These Roses sprang and budded fair,
And carry'd such a grace,
That Kings of England in their arms
Afford them worthy place.
And flourish may these Roses long,
That all the world may tell
How owners of these princely flow'rs
In virtues did excel.

To glorify these Roses more,
King Henry and his Queen
First placed their pictures in wrought gold
Most gorgeous to be seen.
The King's own guard now wear the same
Upon their back and breast,
Where love and loyalty remain,
And evermore shall rest.

Lys, and Fleur de Lis. PRIOR, in his *Popular Names of British Plants*, mentions the legend that a shield charged with these flowers was brought to CLOVIS from heaven while engaged in battle against the Saracens. They were assumed by LOUIS VII. in 1137 as his device, and later on they were bestowed on JOAN OF ARC.

No doubt several of our monarchs did quarter the Fleur-de-Lys on their coats of arms as a testimony of their rights in France, rights now happily long become obsolete, and consequently also the claim to quarter the Fleur-de-Lys.

Another claimant put forward for heraldic recognition is the Lily - of - the - Valley, a native plant of unsurpassed elegance and delicious fragrance, but having no claim whatever to be accepted as a national emblem. Much historical interest attaches to the Rose and to the Fleur-de-Lys, but the Lily-of-the-Valley is totally devoid of any such relation. What the "Lily-of-the-Valleys" of the Canticles may have been we do not know, but we may be pretty sure it

was not what we call the Lily-of-the-Valley, which is not a native of Palestine.

The Christmas Rose puts forth no claim to historical significance, but its lovely flowers, expanding at this season, are so beautiful, that they confer a right to the popular name Rose, although botanically they have nothing to do with the genuine Rose.

Whatever flowers be adopted for merely decorative purposes at the Coronation, we plead that as a matter of ceremonial usage, no other than the Rose of England be adopted.

ROYAL HORTICULTURAL SOCIETY.—The first meeting of the Committees of the Royal Horticultural Society in 1902 will be held as usual in the Drill Hall, Buckingham Gate, Westminster, on Tuesday, January 14. An election of new Fellows will take place at 3 o'clock. To prevent misunderstanding, it may be mentioned that the committees of 1901 do not vacate office until the date of the annual meeting, 1902, and in like manner all Fellows' tickets of 1901 are available until the end of January, 1902.

NEW CHRYSANTHEMUMS.—We have received from Messrs. W. WELLS & Co., Earlswood Nurseries, Redhill, Surrey, a sheet containing illustrations of novelties for next season. Most of them are about 6 inches by 5 inches, and are large enough to afford some idea at least of the general character of each flower. Although the sheet will probably be distributed with a descriptive catalogue, it would have been convenient if the colour, as well as the name, of each variety had been given upon the sheet itself.

M. FERD. MASSANGE DE LOUVREX.—We regret to learn, from the *Revue de l'Horticulture Belge*, of the death of this gentleman, who was a keen horticulturist, and a well known cultivator of Orchids.

LILIES.—Mr. BARR, who is now in South Africa, or was when we last heard of him, has been discoursing on Lilies. To illustrate the reading, a fine group of *Lilium longiflorum* eximium was placed in front of the chairman, to show the one Lily of the world which represents the greatest amount of circulating capital. It is estimated that Bermuda exports from £15,000 to £20,000 worth of bulbs annually of these Lilies to New York and London; Japan exports about the same amount of money, and as these Lilies are thrown away by nurserymen after they have sold the flowers, instead of a decrease in the demand, it has been annually increasing, since its value as a cut flower and for forcing was discovered in 1882. The flats around Cape Town could be profitably used for the production of this Lily, and an industry started which would add a nice little item to the profitable exports of the colony.

M. DÉSIRE BRUNEAU.—The death is announced of this well-known nurseryman, who yearly obtained the highest awards at the Paris exhibitions. M. DE BRUNEAU was seventy-four years of age, and last year retired from business, leaving his large nurseries at Bourglaine-Reine, near Paris, to his son-in-law, M. NOMBLET BRUNEAU.

PRESENTATION AT EXETER.—At the Castle Hotel, Exeter, on Saturday evening, Mr. F. W. MEYER, landscape gardener with the firm of Messrs. ROBERT VEITCH & SON, of the Royal Nurseries, Exeter, entertained his fellow employees to supper to celebrate the completion of twenty-five years' service. His colleagues took the opportunity of presenting

Mr. MEYER with a handsome silver-mounted smoker's cabinet and outfit and an address of congratulation on their behalf, subscribed to by thirty-six members of the staff. Mr. VEITCH sent a handsome silver salver with a cheque and a letter, in which he expressed his appreciation of the services of Mr. MEYER and the efficiency with which he had fulfilled his duties as professional landscape gardener to the firm during these years.

LIST OF SOME PLANTS IN FLOWER IN THE OPEN AT CHRISTMAS, 1901, AT LA MORTOLA.—Sir THOMAS HANBURY, K.C.V.O., sends us the following list of some of the more remarkable plants in flower at La Mortola this Christmas. It appears there has been no frost as yet this winter in that favoured locality; and while in many parts of England distressing droughts have prevailed, the year 1901 there has proved one of the wettest on record, no less than 46·4 inches of rain having fallen, or about double the average—of this, 15 inches fell in the month of October.

| | |
|-----------------------|--------------------------|
| Acacia Farnesiana | Grevillea alpina |
| A. salicina, &c. | G. longifolia |
| Albizzia lophantha | Hakea eucalyptoides |
| Aloe ciliaris | H. pugioniformis |
| A. socotrina | H. suaveolens |
| Amicia zygomeris | Hexacentris coccinea |
| Anagryis fetida | Huernia aspera |
| Anthocereis viscosa | H. Penzigi |
| Banksia marcescens | Linum trigynum |
| B. verticillata | Lotus Jacobæus |
| Brassica rupestris | Melanthus Trimenianus |
| Bryophyllum crenatum | Odontospermum sericeum |
| Buddleia americana | Passiflora racemosa |
| Canarina campanulata | Pilocarpus pinnatifolius |
| Caralluma europæa | Rosa sinica |
| C. maroccana | Royena pubescens |
| Cassia coquimbensis | Senecio angulatus |
| Clerodendron fragrans | S. macroglossus |
| Cobæa scandens | Stapelia tomoensis |
| Correa coccinea | S. hirsuta |
| Dahlia Maximiliana | Strelitzia Regina |
| Datura arborea | Tagetes lacera |
| D. sanguinea | Templetonia retusa |
| D. suaveolens | Visnea Mocanera |
| Ephedra altissima | Yucca gloriosa |
| Gerbera Jamesoni | |

MEETING OF THE FRENCH POMOLOGICAL SOCIETY.—The French Pomological Society lately held a meeting for the election of a President to succeed the late M. DE LA BASTIE, and various other new members. M. LUIZET was elected President, M. JACQUIER, fils, and M. TREVE, père, were elected Vice-Presidents. The nomination of a Secretary was postponed until the next meeting, which will be held at Pau; M. J. NICHOLAS discharges the duties in the interim. M. DE VEYSSIERE is made Treasurer. The late President, M. DE LA BASTIE, has bequeathed to the Society all his manuscripts, part of his library, and two thousand francs.

THE BATTLE OF ROSES.—Mr. WM. BAYLOR HARTLAND, of Patrick Street and Ard Cairn, Cork, sends his friends and clients a charming picture of a playful Battle of Roses between two pretty maidens under a sunny sky. The picture, which is nicely coloured, is mounted on rollers all ready to be hung up, and some appropriate verses by Mrs. HEMANS are appended to it as well as the patriotic sentiment that: "This Green Isle of ours will yet win its way and put its goods over the wide world by Industry."

CYPRIPEDIUMS IN SEASON.—A very fine set of *Cypripedium* flowers has been kindly sent for our inspection by O. O. WRIGLEY, Esq., Bridge Hall, Bury (gr., Mr. E. ROGERS), and in which a very high state of cultivation is indicated, for in each case we have never seen the flowers of the varieties represented so fine. *Cypripedium* × *Swinburnei* magnificum is a gigantic, heavily-blotched flower; *C. insigne* macranthum equals the stately *C. i.*

Harcfield Hall variety, and somewhat resembles it; *C. i.* Marion has the blotching in the upper sepal of a light purplish-brown, the spots being merged; *C. i.* Dorothy and *C. i.* Luciani are two fine clear yellow varieties, the latter the brighter and better; *C. × nitens* superbum and *C. × J.* Howes have fine dorsal sepals, with purple spotting on the white upper half; *C. × Calypso*, Oakwood variety, has the upper sepal white, heavily marked with purple; *C. × Lecanum* superbissimum, giganteum, conspicuum, Cypher's variety, and aureum giganteum show a very wide range in this fine hybrid, and afford ample excuse for their distinguishing names. The others are *C. × Manselli* (Chamberlainianum × villosum), a very singular-looking hybrid, with greenish flowers, tinged and striped with purple-brown; and *C. × Fascinator* (Spicerianum magnificum × hirsutissimum), the twisted, purple-tinged, densely-spotted petals of which very closely resemble those of *C. hirsutissimum*; the dorsal sepal, however, more nearly resembles *C. Spicerianum*, being white, with a broad purple-coloured band running up the centre, and a rose-purple tint on each side.

OXTON HALL.—We understand that in consequence of the death of the elder Miss HARRIS, the Oxtan Hall estate, near Tadcaster, has changed hands. Mr. CROFT, the head gardener, has retired on an annuity, after serving the Misses HARRIS and their parents for the long period of forty-five years. He is succeeded by Mr. T. MARSH, who for a good many years has been second gardener at Oxtan. The new owner of Oxtan is Mrs. OLIVER, of Bolton Lodge, near Bolton Percy, Yorks, a lady who takes much interest in horticulture generally.

XANTHORRHEA HASTILIS.—The "spear-headed, grass gum" tree of Australia is throwing up a strong flower-spike in the Trinity College Botanic Garden, Dublin. The same plant flowered before prior to 1879, and the old flower-spike is still kept—dried, of course. These tree sedges are not very common in gardens, both seedlings and old imported plants being difficult to establish.

CHRYSANTHEMUM SALAD.—At the meeting of the French Society of Chrysanthemum growers at Grenoble some large flower-heads of Madame Carnot were prepared as salad. Some approved, some disapproved, others said they were not so very bad. In any case, we gather that the experiment is not likely to be repeated.

HOW M. CALVAT BECAME A CHRYSANTHEMUM GROWER.—There is a tendency towards self-disparagement amongst us Britons. This arises from the progress made in Germany, the United States, and other countries which have distanced us in the applications of science, and in consequence threaten our commercial supremacy. It is pleasant therefore to read in *Le Chrysanthème* that M. CALVAT's success as a Chrysanthemum raiser is directly attributable to the treatise of Mr. E. MOLYNEUX, which he purchased, and of which, being able to read English, he knew how to avail himself. If M. CALVAT had not known English, he would not have read MOLYNEUX. If he had not read MOLYNEUX, he would not have enriched horticulture with so many fine varieties—the moral is obvious.

ROSE MRS. AMES.—As we stated in our last issue, we received from the United States a dozen blooms of this new Rose. They were brought over by Mr. DIMMICK in a case; the stalk of each Rose being inserted in a small pial of water, so packed that the water did not run out, nor the bottle become

broken. They arrived on the 23rd ult. in excellent condition. We noted this the more particularly as some that were sent over on a previous occasion fell to pieces as soon as the case was unpacked. One or two of the outer petals which had been bruised, and were browned, were removed, and the next morning we had on our table a bunch of Roses as fresh as if the month had been July, instead of December. The flowers had slightly expanded and showed to advantage, their central pink petals almost of the colour of those of "Blairii n. 2." Still, we expected the petals to fall; still they remained intact, so much so that some thought the flowers had been gummed, but that was clearly not so. On the 29th ult. they were voted no longer suitable for the drawing-room, though even then they had not cast a petal. The Roses were cut with long stalks, and the foliage was solid and dark rich green, so that the flowers had a supply of nourishment at their disposal, and this may have accounted for their persistence.

PUBLICATIONS RECEIVED.—*Nature Notes*, Dec.—*West Indian Bulletin*, vol. ii., No. 3. Contents: Cacao, Thrips and Fungoid Diseases; Sugar-cane, Disease, Bud-variation, Manuring, Planting, and Crop Seasons; Formation of Sugar; Sour Grass; Insectivorous Birds. —*Principal Government Crop Report, Nova Scotia*, Nov., 1901. "The season was unusually early, and up to the first week in July the weather was favourable for the growth of all kinds of crops, but a drought set in about that time, and retarded the growth of all kinds of crops except hay. The hay crop in Cape Breton fell short, and had the effect of reducing the production in the whole province to an average one. All other field crops are under the average. The fruit crop varied to a considerable extent, but taking it as a whole it has been fairly large, and the quality excellent."—*Journal of the Kew Guild*.—*Profitable Fruit-growing*, by John Wright (Collingridge).—*A Study of San Luis Obispo*.—From the Department of Agriculture and Technical Instruction for Ireland: *Agricultural Statistics, Ireland*, 1901. *Report on Irish Migratory Labourers*; also, *Journal of the Department*, December, 1901. Contents: Early Potato Growing; "Field Experiments," and "Demonstration Plots," Art-craft Classes at the Glasgow School of Art, Use and Purchase of Manures, Canadian Store Cattle, Trade Notes and Memoranda.—Imperial Department of Agriculture for the West Indies: *General Treatment of Insect Pests* (second edition).—Jamaica Board of Agriculture: *A Report on the Cultivation of Pineapples and other Products of Florida*, by Robert Thomson. *Agricultural Bulletin of the Straits and Federated Malay States*, edited by H. N. Ridley. Contents: Timbers of the Malay Peninsula (continued), Treatment of Insect Pests, Elementary Notes on the Propagation of Plants, by C. Curtis, F.L.S.; Vitality of Seeds, Foxy Coffee, Diseased Roots of Para Rubber, &c.—*The Agricultural Gazette of New South Wales*, October. Among the contents are papers on: Millet, Hay, Useful Australian Plants, No. 73; *Deyouxia montana*, J. H. Maiden; Large Roots of Salt-bush, A Fodder Plant for the Arid Interior, Sand-drift at Newcastle, &c.—From the United States Department of Agriculture, Division of Entomology. *The Life-History of Two Species of Plant-Lice Inhabiting both the Witch-Hazel and Birch*, by Theo. Pergande.—Publications of the University of Pennsylvania, New Series, No. 6: *Contributions from the Botanical Laboratory*, vol. ii., No. 2.—*Observations sur les Apocynacées à Latex*, recueillies par M. L. Gentil, dans l'Etat Indépendant du Congo en 1900, par E. De Wildeman.—*Mitteilungen der Deutschen Dendrologischen Gesellschaft*, 1901.

A MAMMOTH CEDAR-TREE.

[SEE SUPPLEMENTARY ILLUSTRATION.]

THE Lebanon Cedar (*Cedrus Libani*) which we illustrate this week (fig. 4), may certainly be described as one of the most remarkable trees in the country, and it would be most interesting if information was forthcoming as to the approximate date when the specimen was planted in the position that has supplied its needs so well. There is, however, nothing but conjecture, and after appealing to many persons connected with Addington Park estate, including the "oldest inhabitant," who is familiar with events which have happened during a period of nearly seventy years, the least indefinite statement is that "the tree has been planted considerably over 100 years."

There being no evidence as to its actual age, we shall content ourselves by affording some

particulars of the present condition and size of the tree, and leave to all who may visit Addington the fascinating task of evolving a theory of their own upon so interesting but dubious a matter.

We visited the little church at Addington, some 600 years old, and from effigies and memorial tablets contained there, it is evident that the Park Estate, previous to it being purchased many years ago by the Ecclesiastical Trustees, belonged to the "Leigh" family, who lived in the parish as early as the middle of the sixteenth century.

The present steward and gardener, Mr. W. Whalley, removed to Addington with Archbishop Tait from Fulham Palace thirty-three years ago. The late Archbishop Benson was the last ecclesiastic who resided here, and about four years ago the estate was sold by the trustees to F. A. English, Esq.

The house is a plain building of grey stone, and the Cedar stands upon the small lawn on the south-east of the building. The best view of the tree is naturally obtained from the south, whence our photograph was taken, growth being rather more vigorous, and the branches better clothed on that side. The spread of the branches from east to west (from right to left of the illustration) is 127 ft., thus affording a covered walk in a direct line of 42 yards. From north to south the spread is rather less, being 104 feet. The view of the area covered by the tree is very impressive, and there is a little more room than is necessary for an average man to walk upright beneath the branches, which are supported by forty-five props, many of them being distinctly shown in the photograph.

The illustration on p. 8 of the base of the tree shows the numerous branches which proceed from near to the ground-level. Two of these come from the ground-level itself, and a third is only 1 foot higher. One of these three divides again almost immediately. We put the tape around the bole immediately above the lower three branches, and it measured 23 feet 4 inches, and the limbs thus shut off measured, in one instance, 7 feet in circumference, and in the case of the forked one, 10 feet 4 inches. The tree has apparently lost one limb from the base on the N.E. side, the scar being covered with lead. Altogether, there are about one dozen main limbs, and four of these are more or less upright. Of the upright ones, three are in good condition, but the fourth has been broken off at some time at about 25 feet. This has been quite overgrown by other branches. The measurements we have given of the spread and girths of the branches were obtained by the tape, but the weather being very wet we could only estimate the height of the tree to be rather more than 50 feet.

No wonder that the Archbishops in their turn were proud to entertain their friends under the branches of this magnificent tree; and not their personal friends alone, but some of the poor from the East of London, who were invited to Addington each year, and were entertained under the same tree, several hundreds being able to sit beneath it at one time. The care of the present owner is to guard this valued link with the past from possible injury, and all upon the estate know their master's instruction that in case of snow falling, the first duty to be discharged is that of attending to the great Cedar, for the loss of a limb would be lamented more than that of a thousand pounds. The tree is in a vigorous condition at the present time, and shows no signs of decrepitude.

There are several other trees of importance at Addington. Two Cedars on the lawn near

to the fountain were planted about 1830. A splendid Tulip-tree (*Liriodendron tulipiferum*) was planted about the same date, and there is an excellent specimen of *Paulownia imperialis*. A very good tree of the Black Walnut (*Juglans nigra*) is said to have been raised from a seed of the great Hickory-tree at Fulham Palace, and is one of the best specimens that exist. There is a Maidenhair-tree (*Ginkgo biloba*) upon the lawn also, and a pinetum in the park. The specimens in the pinetum, however, especially the species of *Abies*, are not flourishing.

The forcing and plant-houses at Addington are very old, and there are two walled-in kitchen-gardens, which together with an orchard, make an area of about 7 acres. The present owner will probably restore the gardens and build new glasshouses when the restoration of the dwelling-house has been completed. For three years past there have been 100 men employed at this task, and the work is not yet finished. We may add for the benefit of arboriculturists who may like to visit Addington, that they should proceed to East Croydon Railway Station, and drive or walk the remaining 4 miles. Our illustrations are from photographs taken by Mr. J. Gregory, Croydon.

KEW NOTES.

THE following plants were in bloom in the greenhouse (No. 4) on the 26th ult., Bank Holiday. *Begonia Gloire de Lorraine* and its varieties, Turnford Hall and Caledonia; *B. semperflorens gigantea rosea*, *B. President Carnot*, *Jasminum nudiflorum*, *Aster rotundifolius* (*Agathæa cœlestis*), *Daphne odora* (indica), *Salvia splendens grandiflora*, *Freesias*, *Peristrophe speciosa*, a bushy little plant with purple flowers; hatches of *Cyclamen* and Chinese *Primulas*, including the stellate form of *Primula sinensis*; *Camellias* upon bushes planted out in the beds; a beautiful display of the attractive and fragrant *Luculia gratissima* upon a plant more than 6 feet high, planted in a bed, and bearing nearly fifty trusses of flowers; *Reinwardtia* (*Linum*) *trigyna*; varieties of *Erica* and *Epacris*; *Calceolaria Burbridgei*, which has flowers during the greater part of the year; *Centropogon Lucyanus* × *Cytisus fragrans*; Roman Hyacinths; *Rhododendron Illuminator*, and *R. Princess Alexandra*; *Tibouchina* (*Lasiandra*) *macrantha* (on roof); *Primula obconica*; the new flowering *Coleus*, *C. thyrsoides*, figured in our columns last year, with cobalt-blue flowers, a plant that should be obtained by all who have not yet this species; *Eupatorium odoratum*; *Eriostemon cuspidatus*; *Moschosma riparium*, a Labiate plant 2 to 3 feet high, bearing white flowers produced from the axils of the leaves; *Richardia* (*Calla*) *africana*; *Cestrum* (*Habrothamnus*) *aurantiacum* and *elegans*; *Acacia fragrans* variety, *A. platyptera*; *Tecoma Smithii*, a hybrid from *T. velutina* ♀ and *T. capensis* ♂, and figured in *Gardeners' Chronicle*, July 21, 1894; a *Bignoniaceae* plant with orange coloured flowers, very free, and lasting a considerable time—a capital greenhouse plant; *Chrysanthemums*; *Prunus japonica*, fl.-pl., a pretty hardy shrub, with long, slender shoots wreathed with small, pure white, double flowers, &c. There were also some well fruited Orange-trees (*Citrus aurantiacum*) in pots, *Solanum integrifolium*, and *Rivina humilis*. In the Cape and Begonia-houses were *Ruellia macrantha*, the beautifully veined *Acanthaceae* flower illustrated in these pages last week; *Jacobinia chrysostephana*, a species with orange-coloured flowers; *Eranthemum albiflorum*, and *E. An-*

dersoni. Eranthemums are very pretty plants for the stove or intermediate-house if flowered in pots of moderate size, and fresh stock be raised each spring from cuttings.

In the Water-Lily (*Victoria Regia*) house, the mammoth species of *Grammatophyllum* (*G. speciosa*) was in flower, but the spikes appear weak and injured. They will probably not grow more than 2½ feet in height, but in *Gardeners' Chronicle*, August 28, 1897, flowers were illustrated from a spike which was 7 feet high, the individual flowers being 5 inches across. The prevailing colour of the flowers is dull yellow, spotted with reddish-purple. An abnormal (male) flower produced at the base of a spike in Sir Trevor Lawrence's garden, and figured in the same issue of the *Gardeners' Chronicle*, was very handsome by reason of its profuse and rich spotting, but it had only four nearly equal segments, and no true lip. On the roof of the same house, a large plant of *Ipomœa Horsfalli* Briggsæ bore scores of bright carmine flowers, and made a

BOOK NOTICE.

THE JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY.

THE December part has lately reached us, and we may say of it that it more than merits the commendations we have expressed on previous numbers. It opens with an account of decorative gardening in the London parks, by Colonel Wheatley. Then follow the abstracts of certain lectures given by Professor Henslow to the Chiswick students, in one of which the Professor attributes, to the recommendation of Prof. Daubeney, the glazing of the houses with green glass. We believe it was the late Robert Hunt who made the suggestion; but in any case, the green glass has been abandoned wherever practicable. Another lecture of great interest is that on the effect of London fog on plants, in which the valuable observations of Prof. F. W. Oliver, published in an exhaustive report in an earlier volume

a direct or even an indirect bearing on horticulture; but that abstracts relating to pure botany be omitted. Discussions on the chromosomes of *Larix leptolepis*, or on the "middle lamella," for instance, seem out of place in a horticultural journal. Again, in the "abstracts" it would be well to cite at first hand, or, at least, to note where necessary, the fact that a particular plant, or whatever it may be, has already been figured and described elsewhere, often more satisfactorily than in the publication to which reference is made.

The "common-place notes" by the secretary and superintendent are excellent. Amongst other things they suggest attempting a cross between *Anemone nemorosa* and *A. coronaria*. This would indeed be an interesting cross; may we be there to see it! Following these chatty and useful notes comes a descriptive record of the Gladioli and other plants grown for trial at Chiswick last summer, and then a very valuable report on Plums, important to all fruit-growers. Lastly come the reports of the various meetings of the several committees.

We should like, as we have said before, to see the irrelevant tail-pieces removed; or if that be considered undesirable, that some descriptive legend be attached to them, and that they be separated from the text by a "rule." The details of the flower-head of Composites on p. 457 have, like the other tail-pieces, nothing to do with the subject in hand, although they are not even separated from it by a "rule." Moreover, the so-called "seeds" are technically something more than seeds.

The other illustrations have, we think, without exception, appeared previously in the horticultural papers. So important a publication as the *Journal* might, now that the finances of the Society are in a flourishing condition, depend more upon its own resources.

But these are points of detail of very minor importance. What is of consequence is the fact that the Fellows of the Society get a high-class journal of excellent quality which, of itself, is of considerably greater monetary value than the average amount of their subscription. The labour of editing amid all the multifarious duties of the Secretary must be very considerable, but the work is thoroughly well done, and whilst it adds greatly to the position of the Society, it confers the highest credit on the Editor.

A NEW APPLE.

MR. C. ROSS, gardener to Captain Carstairs, Welford Park, Newbury, has raised several good Apples from crosses between the varieties Cox's Orange Pippin and Peasgood's Nonsuch, and one of these which was figured in the *Gardeners' Chronicle*, Sept. 30, 1899, p. 259, as Thomas Andrew Knight, but has since been re-named Charles Ross, promises to combine the excellent quality and flavour of the former variety with increased size and attractiveness from the showy but comparatively worthless Apple Peasgood's Nonsuch. The new Apple shown in fig. 5, and named "The Houblon," had the same parentage as Charles Ross. Fruits were shown at a meeting of the Royal Horticultural Society on the 17th ult., when an Award of Merit was recommended the novelty. The fruits were not larger than those of Cox's Orange Pippin, but were very highly coloured, especially on one side, the colour occasionally having the appearance of splashes. The eye is open, and set in a moderate-sized basin; stalk less than half an inch long, proceeding from an even, funnel-shaped cavity. The quality of the flesh is good.



FIG. 5.—APPLE "THE HOUBLON."

rich display of colour. This is an old stove climbing plant well worth recommendation.

In the Orchid-houses the varieties of *Calanthe* were making a good show, the colour of *C. Veitchi* being varied with those of several of the *C. vestita* and other hybrids. In addition were *Oncidium varicosum*, *Laelia anceps* var. *Barkeriana*, *Zygopetalum Mackaii*, *Epidendrum vitellinum*, *Dendrobium endocharis*, species of *Cypripedium*, including *C. Fitchianum*, a pretty and distinct flower, the prevailing colour green, with a little purple on the petals; *Cymbidium giganteum*, *Masdevallias*, *Odontoglossum Andersonianum*, and its variety *Ruckerianum*, *Lycaste Skinneri*, *Habenaria carnea*, *Sophranitis grandiflora*, &c.

From the above list it will be seen that in the greenhouse and the T-range alone there were very many interesting plants for the holiday-makers whose tastes led them to Kew, whilst in all the other houses and museums open to the public, much information could be obtained by those desirous of improving their horticultural knowledge.

PLANT PORTRAITS.

CYSTOPTERIS BULBIFERA.—*Meehans' Monthly*, Dec.
PITCAIRNIA MICHELIANA, Ed. André, sp. nov.—A new Mexican species, with pendent, linear leaves, and erect racemes of crimson flowers.—*Revue Horticole*, Dec. 16.

are summarised. A paper of special interest is that of the Rev. H. Ewbank on the *Oncocyclis* group of Irises, the proofs of which were corrected by the author only a few days before his death. A second paper on the same subject by Mr. John Hogg, of Haarlem, is divorced from the first by the interpolation of a representation of the leaf and flowers of some unnamed *Eucalyptus*.

But the chief value of this part consists in the full report of the Lily Exhibition and Conference at Chiswick last July. We need not do more than allude to this conference, as it was very fully reported in our own columns. But we may repeat that this conference again illustrated the fact that, of all the work done by the Society, none equals in permanent value the records of these conferences. After the Lily Conference comes a long paper on Vine-culture as exemplified at the Paris Exhibition by Sir James Blyth, which is the same paper that was read before the London Chamber of Commerce. Another very important paper is that by Mr. C. G. Wyatt on the origin and development of the Cactus *Dahlia*.

The notes on recent research are most useful, but it may not be irrelevant to suggest that these notes be confined to subjects having

BACTERIOSIS IN ORCHIDS.

On October 5 last, Mr. William Murray, gardener to Norman Cookson, Esq., Oakwood, Wylam, handed me a portion of a diseased plant of *Cattleya Mendeli*. Some of the pseudo-bulbs were black and soft, the youngest on the point of collapse, whilst others were yellowish-brown. The blackness was extending from the infected bulbs into the leaves from the base towards the point. The infected bulbs were full of a dark brown liquid, smelling something like Worcester-sauce. The liquid was in very large quantity, was distinctly alkaline, and was swarming with motile bacteria, amongst which were a few fungus-cells like those figured by Wahrlich in the *Botanische Zeitung*, July 16 and 23, 1886, and called by him *Fusisporium sporen* (?). The liquid also contained isolated empty cells in plenty, and the tissue of the bulb was reduced to epidermis, fibro-vascular bundles, and empty collapsed cells. After a very thorough examination, no wound through which the bulbs might have been infected was to be seen, though doubtless the plant is infected through wounds.

The next day, having no *Cattleyas* available for experiment, a bulb of *Odontoglossum grande* was stabbed by a needle which had been dipped in the brown juice from the infected *Cattleya* bulb; and at the same time drops of the fluid were placed on uninjured bulbs, leaves, and roots of another plant of the same species. The stabbed bulb immediately began rotting, and in a week was rotten throughout, but unchanged in colour; the uninjured portions were unaffected.

The ordinary methods of isolating the bacterium which causes the rot by means of plate cultures was used. Isolated colonies were obtained and transferred to tubes of nutrient gelatine, and after a month's work I was satisfied that I had isolated the bacillus of the rot. It liquefies the gelatine, forming a funnel-shaped growth, with at first a large bubble at the top; the growth, however, is limited to about $\frac{1}{4}$ -inch of the top, and a tube following the line of the stab. The organism grows very well in bouillon with peptone neutral to litmus.

From a pure culture in gelatine I have induced black rot in young *Cattleya* bulbs, and a rot which leaves the bulb unaltered in colour in bulbs of *Odontoglossum grande*, *O. crispum*, and *O. Pescatorei*. Old bulbs of *Cattleya* were not infected, probably because there is an accumulation of organic acids in such bulbs. Turnips, yellow and white; Potatoes, bulbs of *Lilium* (sp.), Hyacinth, Tulip, and *Narcissus* are not affected. Bulbs of *Epipendrum vitellinum* were rotted and blackened, those of *Miltonia spectabilis*, *Celoglyne cristata*, *Sophranitis grandiflora*, and *Oncidium Forbesii* were rotted, but the colour was unchanged. A young *Dendrobium* bulb succumbed to the bacillus, but an old one which was very acid was not affected; *Cypripedium insigne* also was unaffected. Leaves of *Odontoglossum crispum* were unaffected when the epidermis was unbroken, but rapidly succumbed when infected on a scratch. They are not darkened in colour, at least, in the early stage of infection. Always, so far as I have experimented, a strongly acid Orchid tissue is unattacked. The reaction of infected tissue is always alkaline.

I have followed the action microscopically in bulbs of *Odontoglossum*: the middle layer of the cell-walls is first attacked. By this means, the cells are entirely isolated, and one finds in the fluid the large, apparently empty, mucilage cells, the smaller cells loaded

with starch grains, or with a bundle of raphides in them. The protoplasm of the cells is attacked, and slowly disappears. The cell-walls become exceedingly thin, and I think that bacteria enter the cells, but of that I am not at all sure. In parts where the action has not extended strongly, the cell-walls appear swollen, and the splitting along the middle lamellæ is very evident.

The organism is a short motile bacillus whose flagella I have not yet succeeded in staining. I am still engaged in investigating the exact effects of this bacillus on the tissues of Orchids, and the nature of the products of its fermentative action. J. B. Gateshead.

THE APIARY.

BAR FRAMES.

In my last article I left off at the price of sections at 8d. each, and considering that the cost of the bees should only be about 5s. and the crate 3s. 6d., this is a very good return. I now come to the modern system of bee keeping, namely, keeping bees in bar frames, or what is known as the standard hives; by this is meant that all hives are made of one size, so far as depth and width go—it does not much matter what the length is; but a hive holding from 10 to 14 frames is best, as the smaller the hive the greater the heat, and for winter purposes this is proved to be the best. Now, as to the cost: a complete bar frame hive should not cost more than 12s. 6d. to 15s. 6d. complete, as this answers all purposes for honey-raising, and the cost of the bees, 5s., make a total of 17s. 6d., and in a good season three crates of sections, each crate containing twenty-one 1 lb. sections of honey can be raised, and reckoning this at 6d. each section, the bee-keeper more than covers his outlay.

It should always be borne in mind that bees require looking after just at the right time, and when all is going well they should be let alone. I mentioned just now about the hive being of standard size; this is important, as then the frames from one hive will fit another hive, so that you can strengthen your weak stock from a strong one. And another item of importance is, that should you at any time wish to dispose of them, you stand a much better chance of securing a good price than you would if your hives were all of different sizes. All beginners in bee-keeping should try and remember that it is far better to understand how to manage one or two hives properly than to undertake a large number all at once.

The most successful bee-keepers are generally those who study the practical part first. Another particular item, too, in bee-keeping is, that everything should be kept as clean as possible, and this applies most strictly to honey for market, for everything should be clean and up to the sample. It is well known now that no garden is complete without bees, because every gardener will agree that unless there are bees to inoculate the different blossoms, but little fruit would set. In conclusion, I would again recommend every beginner to get someone to give him a lesson, and be as simple as possible in all manipulations, and he will find that as the bees interest him, the better and more expert a bee-keeper he will become. Expert.

HOME CORRESPONDENCE.

RAILWAY SLEEPERS.—In answer to an enquiry, I may say that on the Canadian Pacific from the Atlantic Coast to the base of the Rocky Mountains, the ties are probably made of *Thuja occidentalis*, as in most of the lines

in the Northern United States. In the Rocky Mountain region traversed by the line, *Picea Engelmanni* yields the best timber. Towards the Pacific coast, the Douglas Fir and the Red Wood, *Sequoia sempervirens*, this last being universally used in the Arizona railways. In Oregon and Washington, Red Wood and Douglas Fir are used, and occasionally *Pinus ponderosa*. C. S. S.

VEGETABLES AND FARM PLANTS THRIVING IN SOUTH AFRICA.—In reply to Mr. Jas. Crabbe's enquiry concerning seeds of farm and garden plants in the eastern provinces of Cape Colony, I have much pleasure in giving that gentleman the desired information. Many of the garden vegetables are farmed; I therefore give but one list. I believe Runner Beans are a failure in Cape Colony, as I have never seen them grown or sown:—

| | |
|------------------------|--------------------------|
| Asparagus | Lucerne |
| Beet | Lentils |
| Beans (French) | Melons (sweet and water) |
| " (Broad) | Maize (Mealies) |
| Broccoli | Mangel-wurzel |
| Borecole | Millet (Kaffir Corn) |
| Brussels Sprouts | Onions |
| Barley | Oats |
| Cauliflower | Parsnips |
| Cabbage | Potatoes |
| Carrots | Peas |
| Clover | Parsley |
| Cucumbers | Radish |
| Celery | Rhubarb |
| Capsicums | Savoy |
| Egg-plant (Aubergines) | Seakale |
| Gourds and Vegetable- | Spinach |
| Marrows | Turnips |
| Herbs, all sorts | Tomatoes |
| Kohl Rabi | Wheat. |
| Lettuce | |
| Leeks | |

All the above pay for growing, some of them being very remunerative. W. Miles, late of South Africa.

— In reply to Mr. James Crabbe's enquiry in your last issue, I spent some sixteen months in South Africa with my yeomanry regiment. During that time we traversed parts of Cape Colony, Bechuanaland, Griqualand, Orange River Colony, and Transvaal, where I noticed with infinite pleasure how luxuriant and rapid was the growth of all imported Conifers and deciduous trees. The climate is admirably adapted to almost every form of vegetation, but the curse of the country is its locusts, which at certain seasons sweep over huge areas, leaving not a single green blade in their track. The absence of irrigation is also, of course, against success in some parts, but this can be overcome, as water may be found almost anywhere by boring. All the vegetables Mr. Crabbe enumerates should flourish exceedingly; indeed, I have seen most of them growing. Some common Gourds and Melons are indigenous to the Transvaal, and Maize is the staple crop of South Africa. Already large sums of money have been made by market-growers around Johannesburg, where high prices were given on the Rand for such vegetables as Mr. Crabbe names. I shall be happy to give Mr. Crabbe any further information in my power, if you will put me in communication with him. James Wm. Watt.

CABBAGE CLUBBING.—All experience goes to show that gas-lime, to be a successful destroyer of the club or slime fungus in the soil, or even of the maggot-club, must be spread over the ground early in the winter, left untouched a few weeks to become pulverised, then spread more thinly and dug in. But surely, no one of any experience would plant a successional crop of the Cabbage tribe in ground which had just previously carried a diseased Cabbage crop! But if all the contiguous ground alike is infested with club-fungus or maggot, then is it well to dress every vacant plot in the way advised; and if there be a breadth of young Cabbages close by, dress them with the lime in mid-winter, and after it has been exposed a few weeks, hoe or point it in. It has been said that it is the sulphur in the gas-lime which destroys the fungus. No doubt it does, but rather less as pure sulphur than as sulphuric-acid, hence the need of applying it so carefully. A. D.

CANTALOUPE MELONS.—In reference to your article on p. 465, I may state that I have grown a variety of Cantaloupe for the past three years, and have no difficulty in getting fruits that weigh 12 lb. each, with flavour equal to many of our English varieties. Unfortunately, my present employer objects to Melons of this size, preferring those of 2½ to 3 lb. each, and I have heard of others who make the same objection. Cantaloupe Melons make excellent jam when mixed with equal proportion of Apple, Keswick Codlin preferred. *Hy. Harris, Castle Gardens, Wenvoe, near Cardiff.*

RUST ON CHRYSANTHEMUMS.—A writer on p. 460 suggests that this is caused by artificial manure. The same suggestion was made, I well remember, in respect to the Potato-disease, and the doom of that vegetable was promised. I am of opinion that manure has little or nothing to do with the rust in Chrysanthemums; in fact, I hold a contrary opinion, and that a well-fed, vigorous-growing plant is not so liable to be attacked as is a weakly one. There are two periods in the growth of the plants when the disease generally breaks out. Growers look for its appearance, and generally first find it, on the bottom and almost exhausted leaves of a plant, say during the early part of September, when it (the plant) is finishing its growth. Another period for the appearance of the "rust" is soon after the cuttings are inserted, and before they grow away freely. They may be clean, apparently, when inserted, but shortly afterwards the disease is found in the soft, decaying foliage. Most growers know that if these leaves are removed, and the plant started into growth vigorously, there is little to fear until the end of the summer, as already mentioned. Almost my first experience of this disease was with a bed of early-flowering varieties, which had stood on the same ground two seasons; they were planted in rows, one row of each kind. The plants had no manure or water, and the ground was in poor condition. Early in August, when growth was finishing, a variety well known as "Flora" was so infested that the leaves and flowers, or what would have been flowers, were as brown as snuff. On each side the plants were affected, but had a green appearance. It was sufficient proof for me that manuring or high culture had nothing whatever to do with the disease, and it also proved that some varieties were much more liable to its attacks than others. With the Potatoes, the remedy was found in growing only these varieties which were not liable to disease, and the result is that crops were never heavier or Potatoes more plentiful. The same will occur with Chrysanthemums, only those varieties must be grown which will withstand the ravages of the "rust." Growers should make a note of these, and form their collections accordingly. Some varieties always show it first, and seem to encourage an outbreak; let these be avoided, to commence with. *W. J. Godfrey, Exmouth.*

—Doubtless very many readers of the note on above by A. J. Long, appearing in the *Gardeners' Chronicle*, p. 474, Dec. 28, will, with a sigh, perhaps, wish they could believe the writer to be a true prophet. He says, "but I think the disease is rapidly dying out." This is not my experience of it. That some localities will be subject to its ravages more than others, also that some seasons will favour the disease more than others, I have no doubt whatever; but that it is "dying out" I doubt very much, and gardeners should be lulled into no fools' paradise by any such belief. Anyone who has studied the habits of these micro-fungus pests, and knows the vitality of their resting spores, will not be so sanguine as the writer. I am sure that artificial manures do not cause the rust—I am as sure as A. J. L.; but that plants afforded high living, especially when nitrogenous manure is employed, are more susceptible to the attacks of these minute leaf diseases. Anyone who doubts this fact has only to take note of the ravages of *Phytophthora infestans* in Potatoes grown upon poor land, and in those

where the tops indicate a plethora of high living. Perhaps some other of your correspondents will take up this question for the general good. *W. F. E.*

LATE PEAS.—In reply to Mr. T. Lockie, who asks whether I have grown the two late Peas, *Late Queen* and *Michaelmas* together, I have to say that I have not. I grew them in diverse years, and therefore could not, of course, submit them to that severe test as to identity or otherwise that is found by growing them side by side. I do not recollect either as to how the seeds compare, but both are wrinkled Marrowfats. I found both capital late varieties, and have also seen them in good condition as such in various gardens. But both are too late to suit the purpose for which I grow Peas chiefly. In Mr. Lockie's case, something depends on the source from whence he obtained his stocks. I fear that there is not even now in seedsmen so great an excess of virtue as to prevent in the case of a stock being exhausted the sending of one good variety for another. Still, we see enough of Pea varieties at Chiswick to know that very many differ more in name than in appearance. *A. D.*

CANNA MRS. KATE GRAY.—I know nothing of the parentage of this very large flowering *Canna*. It is extremely handsome, but here by no means of dwarf habit, as stated in a previous issue of the *Gardeners' Chronicle*. Last season I grew several dozen plants, most of which exceeded 5 feet in height. Your correspondent, W. Müller, Naples, is in error when he states that *Italia* cannot be seeded. I obtained three seedlings from this variety the first year it was grown here. Of this fact I am quite certain. *W. J. Godfrey, Exmouth.*

THE IDENTIFICATION OF WOODS.—I should be sorry if your readers should go away with the impression that my paper before the Society of Arts on Dec. 4 was chiefly an attack upon any section of botanists. Anything of the kind was far from my intention, and I should be the last man to overlook the services of the Indian School of Botanists, whose labours have furnished us with a very large share of the knowledge we possess of Economic Botany. The key to my remarks lies in the following sentence, which I used: "Perhaps if the scientific side of our study can be developed sufficiently to attract the attention of botanical explorers, we may achieve our end by their assistance." I think that these words imply that we shall do little without them, and an anxiety to solicit their aid. Apart from all this, the names you cite are chiefly typical economic botanists whose work, compared with that which remains to be done, embraces but a small portion of the earth's surface. Omitting India and those regions under the influence of European civilisation, such as Australia and North America, we find scarcely any information of a reliable character, and I could mention scores of species of timber trees of which the proper names can only be guessed at. No one knows what tree the African Ebony comes from, nor the African Mahogany, of which vast quantities are imported, nor African Oak, to mention one locality only, yet the region has been fairly well explored in the interests of systematic botany. I am well aware that they are reputed to belong to certain species, but it is only when one seriously attempts to trace a wood to its origin that one finds how meagre is the information on record. Horticulturists are far more fortunately situated, because explorers know that efforts made by them to introduce or call attention to new plants will meet with appreciation at home. It is otherwise with timbers, for there are so few who would recognise their work upon them, and they have no encouragement to collect information. I have no doubt that, could they rely upon sympathetic co-operation here, the explorers will respond cheerfully enough, and it is to this end that we are looking forward with much hope. *Herbert Stone, Little Hay House, near Lichfield, December 26, 1901.*

SOCIETIES.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

DECEMBER 12.

LIST OF AWARDS.

FIRST-CLASS CERTIFICATES.

Cypripedium × *Lecanum* var. *Clinkaberryannum*.—A fine distinct form, with an unusual amount of white in the dorsal sepal; this segment also, instead of recurving, bends its sides forward. O. O. WRIGLEY, Esq.; also G. W. LAW SCHOFIELD, Esq.

Laelia autumnalis alba.—A fine variety from J. LEE-MANN, Esq.; also awarded a Cultural Certificate.

AWARDS OF MERIT.

Cypripedium × *Niobe* var. *excelsa*.—A good-sized flower, and well coloured. A. J. KEELING.

Cypripedium insigne var. *macranthum*.—A large, densely-marked var. O. O. WRIGLEY, Esq.

Cypripedium × *aureum* var. *belgica*; *Cypripedium* × *Helen*, C. *bellatulum* × C. *insigne* Chantini. R. TUNSTALL, Esq.

Cypripedium × *nitens* var. *albens*.—A form approaching an albino, very distinct. G. W. LAW SCHOFIELD.

Cypripedium × *Lecanum* var. *Albertianum*. E. ROGERSON, Esq.

Laelia anceps var. *Amesiana*.—A variety with a very brilliant frontal lobe to the labellum. Mr. J. CYPHER.

Vanda coerulea var. *magnifica*.—A finely-shaped and richly-coloured form, bearing about 12 flowers on the spike. STANLEY, ASHTON & CO.

GOLD MEDAL.

For a group of *Cypripediums*. O. O. WRIGLEY, Esq.

SILVER-GILT MEDAL.

For a group of Orchids. Mr. J. CYPHER.

SILVER MEDAL.

For a group of Orchids. STANLEY, ASHTON & CO.

For a group of Orchids. Mr. A. J. KEELING.

For a specimen *Cypripedium insigne* Harefield Hall var. (also Cultural Certificate). W. DUCKWORTH, Esq.

VOTES OF THANKS.

For a group of plants. R. TUNSTALL, Esq., E. ROGERSON, Esq., JOHN COWAN & Co., Messrs. H. LOW & Co. P. W.

WARGRAVE GARDENERS'.

DECEMBER 28.—The last meeting for the year 1901 took place on the above date, when Mr. Crechley, of The Honeys, Twyford, read an interesting paper on "Ferns: their Culture and Classification." He dealt with spore formation and sowing, the treatment of the plantlets, suitable temperatures, moisture, potting, soils, manures, &c. The different varieties were described for stove and greenhouse cultivation. Insect pests were mentioned, and a list of Ferns most suitable for cutting, and nursery work was given, after which a splendid collection of dried fronds, fully named, was passed round for inspection. These proved a capital object-lesson, and greatly enhanced the value of the paper. A discussion ensued, and many doubtful points were cleared up. A vote of thanks was accorded Mr. Crechley for his paper. Seven new members were admitted. *H. Coleby, Hon. Sec.*

PARIS.

THE National Horticultural Society of France paid a well-merited compliment to M. Victor Lemoine, the well-known nurseryman of Nancy, when, at the meeting of December 12, they conferred on him the title of Membre d'Honneur. Elections were held on December 26 to fill up vacancies in the Council. Several lists were submitted, of which that from the Council was accepted, except in one case. M. Albert Truffaut, of Versailles, was re-elected as first vice-president; the two other vice-presidents are M. Opoix, head gardener of the Luxembourg, and M. Maurice de Vilmorin, brother of the late M. Henri L. de Vilmorin, and President of the Comité des Rosicristes. M. Eugène Vallerant, Begonia-grower of Taverny, near Paris, is the new member of the Council elected by his colleagues in opposition to a candidate proposed by the Council. The place of the late M. Ernest Bergman, general secretary, has not yet been filled, the election having been deferred as a mark of respect for the deceased.

The Minister of Public Instruction has nominated M. Costantin as Professeur de Culture at the Natural History Museum, in succession to M. Maxime Cornu. M. Costantin was proposed by the Council of the Professors of the Museum, and by the Académie des Sciences.

M. Schlagdenhauffen, the Honorary Director of the Nancy École de Pharmacie, has lately published, in the *Bulletin of the Nancy Société Centrale d'Horticulture*, an interesting paper on *Coronilla*. Having noticed that seeds of *C. varia*, *C. scorpioides*, &c., which are often mixed with the seeds of cereals communicate a peculiar bitter flavour to bread or to beer, the author investigated the matter, and isolated the active principle, to which he has given the name of Coronilline; stating that this substance is poisonous. The effect of it on the heart is analogous to that produced by digitaline, and in small doses (less than one-fiftieth of a gramme) it is beneficial in some forms of heart disease. *Coronilla emerus* is the only species which, under these experiments, yielded no bitter principle. G. T. Grignani.

ENQUIRIES.

FAILURE OF LILY OF THE VALLEY TO FLOWER WELL.—A correspondent resident in a midland town would be glad to know if any other reader of this journal can advise him in the following circumstance. He says: "I have been growing large quantities of retarded Lily-of-the-Valley, and have been very successful with them, always potting them in Cocoanut-fibre; but having run out of fibre, I put 1500 crowns into peat, the result being that about half of them rotted off, and the other half came deformed. Some would throw up the flower-spike and not the leaf; others the leaf and not the flower-spike. Do you think the peat would have anything to do with it? The crowns looked all right before they were potted, and they were grown by the side of others in Cocoanut-fibre which were doing well."

Obituary.

JAMES FITZGERALD LOMBARD, J.P.—It is with deep regret that we have to chronicle the death of Mr. J. F. Lombard, which took place on December 23 at his residence, South Hill, Upper Rathmines, Dublin. For many years Mr. Lombard has been a well-known and spirited citizen of the Irish metropolis, having taken a deep personal interest in the initiation of many important commercial projects and industry, and he was financially interested in business concerns, and years ago took a deep interest in the development of the Dublin Tramway Company. He was a member of the French Legion of Honour.

To horticulturists he was known on account of his interest in florist's flowers, such as Tulips and Gladioli, while he was also famous for the cultivation of some of the best Apples and Pears in the Dublin district, having secured the premier awards for many years from the Royal Horticultural Society of Ireland.

Always a staunch friend of the poor and afflicted, he did much on their behalf through the boards and committees of the numerous civic and charitable institutions, hospitals, &c., to many of which he belonged. Not only did he give freely of his fruit and flowers to his friends and acquaintances whose gardens (if they possessed any) were less prolific than his own, but he sent large quantities to the Dublin hospitals as well.

His home at South Hill stands on the bank of the Dodder River, above Miltown, and sloped south or south-east, and both position

and soil suited trees, flowers, and fruit remarkably well. Although he kept a practical gardener, the initiative was his own, and he grew everything he undertook to great perfection. He was well known to most of the best fruit and fruit-tree growers in England, as to the florists of thirty or forty years ago; and the late Mr. T. Rivers, Dr. Robert Hogg, and many others, used to visit him and his garden whenever they were in Ireland. Only last autumn Mr. Geo. Bunyard spent an evening with him amongst his pictures, &c., of which he was very proud, and his fruit-trees and greenhouses. He was one of the very few amateurs who kept up a collection of Camellias during recent years. He was in every good sense a hospitable and genial man, and was deeply respected by all who had the privilege of knowing him.

Mr. Lombard was in his eighty-fifth year, and his funeral took place on the 26th ult. He was one of the last of amateur horticulturists that linked the gardening fashions of the first half of the century to the last in Dublin and its vicinity. F. W. B.

COL. SIR HENRY COLLETT.—We have to announce the death, at his residence, 21, Cranley Gardens, last Saturday, of Col. Sir Henry Collett, a distinguished Indian officer, who had seen much active service. Apart from his profession, Sir Henry Collett was a keen student of botany, and at the time of his death he was preparing a handbook of the flora of Simla.

JNO. CROSFIELD, J.P.—Many of the readers of this Journal must recall the glorious displays of Camellias and Chrysanthemums at Walton Lea, Warrington. The large numbers of the working classes who had the privilege of inspecting them will share great sympathy which must now be extended to the bereaved family of the late Mr. Jno. Crosfield, J.P., whose death occurred on Thursday last from an attack of bronchitis. Art and horticulture the late Mr. Crosfield made his own particular hobbies, and many encouraging testimonies can be readily adduced. *Orchid*.

G. ST. P. HARRIS.—The death of Mr. George St. Pierre Harris, of Leads Hill House, Orpington, Kent, on the 26th ult., at the advanced age of 94 years, removes a remarkable man from the list of cultivators of the Dahlia. For a man of his age, he had kept wonderfully well and active, taking a great interest in his garden, and especially in the Dahlia. It is as a raiser of Dahlias that Mr. Harris had been so well known amongst florists, and for years he had cultivated the flower, occasionally exhibiting, but devoting his energies mainly to the production of seedlings, both show and fancy. During the past year he exhibited at the Crystal Palace, at the Royal Aquarium, and also at the meetings of the Royal Horticultural Society, such show varieties as Flower of Kent, Brilliant, Queen of the Primroses, Sunset, and Standard, the last-named a deep chestnut-red self, obtained an Award of Merit from the Royal Horticultural Society. A highly promising fancy, named Mariner, had a First-class Certificate of Merit awarded to it at the Crystal Palace; at the former exhibition it also received the Special Prize offered by Mr. Richard Dean for the best seedling fancy Dahlia of the year. A few show Dahlias of Mr. Harris's raising are found in catalogues. One of the best known is Ruby Gem, ruby-crimson, with slight yellow tip to each petal; and some years ago Mr. George Rawlings named a scarlet-crimson self after Mr. Harris, which is still a popular exhibition variety.

During his lifetime Mr. Harris filled certain public offices in the county of Kent, and when he went into retirement from Chelsfield, he built himself a charming mansion on Leads Hill, Orpington, and laid out a delightful garden; and here he found pleasant occupation, especially in cultivating his named and seedling Dahlias. Mr. Harris passed away peacefully after a short illness, leaving a widow. He had the rare experience of living under the reigns of five English Sovereigns. R. D.



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period December 22 to December 28, 1901. Height above sea-level 24 feet.

| 1901 DECEMBER 22 TO DECEMBER 28. | DIRECTION OF WIND. | TEMPERATURE OF THE AIR. | | | | TEMPERATURE OF THE SOIL AT 9 A.M. | | | |
|---|--------------------|-------------------------|-----------|----------|---------|-----------------------------------|-----------------|-----------------|------------------------------|
| | | At 9 A.M. | | DAY. | | At 1-foot deep. | | At 2-feet deep. | |
| | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. | At 1-foot deep. | At 2-feet deep. | At 4-feet deep. | LOWEST TEMPERATURE ON GRASS. |
| | | deg. | deg. | deg. | deg. | deg. | deg. | deg. | deg. |
| SUN. 22 | N.E. | 33.0 | 31.4 | 36.5 | 28.2 | ... | 35.7 | 40.2 | 45.1 |
| MON. 23 | S.E. | 26.5 | 25.6 | 42.7 | 25.7 | 0.22 | 35.5 | 40.0 | 45.0 |
| TUES. 24 | S.W. | 38.7 | 36.8 | 43.1 | 26.0 | 0.63 | 35.6 | 39.8 | 44.8 |
| WED. 25 | W.S.W. | 33.9 | 33.5 | 40.6 | 30.8 | 0.03 | 36.1 | 39.5 | 44.5 |
| THU. 26 | W.S.W. | 34.5 | 33.7 | 41.6 | 33.2 | ... | 36.1 | 39.7 | 44.3 |
| FRI. 27 | W.S.W. | 34.3 | 32.3 | 39.7 | 27.9 | 0.05 | 35.7 | 39.7 | 44.2 |
| SAT. 28 | S.E. | 39.4 | 38.6 | 44.1 | 25.3 | 0.35 | 35.4 | 39.5 | 44.0 |
| MEANS | ... | 34.3 | 33.1 | 41.2 | 28.2 | 1.28 | 35.7 | 39.8 | 44.6 |

Remarks.—The temperature remains much about the same as last week, with cold winds, slight snow-showers, and rain on five days.

GENERAL OBSERVATIONS.

The following summary record of the weather through out the British Islands, for the weeks ending Dec. 21 and 28, is furnished from the Meteorological Office:—

"The weather during this period was cold and unsettled generally. Snow, sleet, or cold rain were frequently experienced in the more northern and western districts, but in the south and south-east the weather was drier and fairer, and the rainfall slight. Thunder and lightning were experienced at some north-western stations on the 18th or 19th.

"The temperature was below the mean in all parts of the kingdom, the deficit in most districts being as much as 5° or 6°. The highest of the maxima occurred as a rule during the middle of the week, and ranged from 53° in the Channel Islands, and 48° in Ireland, S., to 41° in England, E. and the Midland Counties. The daily maxima at inland stations were frequently only of a few degrees above the freezing point. The lowest of the minima which, with some exceptions, were recorded either on the 20th or 21st, ranged from 12° in the Midland Counties, 19° in England, S.W., and from between 20° and 23° in most other districts, to 31° in the Channel Islands.

"The rainfall was more than the mean in England, N.E., and just equal to it in Scotland, E., England, N.W., and Ireland, N.; in all other districts, however, it was less.

"The bright sunshine exceeded the normal amount in most parts of the kingdom, especially in the south and south-west; but was deficient in Scotland, W. and E., and England, N.E. The percentage of the possible duration ranged from 48 in England, S., 33 in the Channel Islands and England, S.W., to 11 in Scotland, W., 9 in Scotland, E., and 6 in England, N.E.

"The barometer and wind.—The distribution of pressure over our Islands changed frequently during this week. The principal disturbances were: one that moved quickly southwards over the western part of our islands soon after the commencement of the period, and disappeared over Spain, and another system which, after travelling southwards

down the North Sea to our north-east coast, remained stationary, and gradually filled up. As pressure to the westward of these disturbances was comparatively high, the northerly winds on our western coasts were generally strong, and at times attained the force of a gale; but in the east and south the winds were more variable, and lighter in force. At the end of the week the barometer was falling decidedly along our western coasts, and the wind in that region shifted to S. or S.E., and was increasing in force.

"The weather was again in a very unsettled condition. Rain was of almost daily occurrence in the more southern and western districts, and rain, sleet, or snow in the north. The falls were at times large—especially those experienced over England on Saturday.

"The temperature was below the mean in all districts, the deficit ranging from 2° in Scotland, N., and the Channel Islands, to 4° in Scotland, E., and England, N.E. and N.W., and to 5° in the Midland Counties and Scotland, W. The highest of the maxima were recorded on Saturday, when they varied from 52° in the Channel Islands and England, N.W., to 42° in Scotland, E., and England, N.E. The absolute minima, which were registered on irregular dates, were very low in many inland places. At Newton Reigny on Sunday the thermometer fell as low as 4°, and readings of 20° or below occurred sometime during the period in most inland localities. In Ireland, S., and the Channel Islands, however, the thermometer did not fall below 24° and 31° respectively.

"The rainfall was much in excess of the mean over the Kingdom as a whole, but less in Scotland, N. and W. In many districts the fall was twice as much as the normal amount.

"The bright sunshine was deficient generally, but somewhat exceeded the mean value for the time of year in England, N.E., E., and S., and also in Ireland, N. The percentage of the possible duration ranged from 26 in the last-named district, and 21 in England, E., to 13 in England, N.W., and to between 9 and 5 in Scotland."

THE WEATHER IN WEST HERTS.

In the early part of the week the weather remained cold, and on one night the exposed thermometer registered 17° of frost. On the other hand, the last few days have been exceptionally warm, the shade temperature on one of them rising to 56°. This sudden change has caused the ground temperatures to rise rapidly, but as might be expected under such conditions, there is a great contrast between the reading at 1 foot deep and that at 2 feet deep—the latter being at the present time 1° colder, while that at 1 foot deep is 4° warmer than is seasonable. Rain fell on four days, to the total depth of an inch. Owing to the recent heavy rains, the ground has become saturated; in fact, as much as 9 gallons of rain-water came through the percolation gauge covered with grass during the week, and 8 gallons through the bare-soil gauge. The winds have been as a rule rather high, and the atmosphere humid.

DECEMBER.

This was a cold month, but at no time did the thermometer on the lawn show more than 19° of frost, which is by no means an exceptionally low extreme minimum for December. The cold period of the month lasted rather more than a fortnight, when on six nights the exposed thermometer showed from 13° to 19° of frost. The total rainfall amounted to 4½ inches, which is nearly twice the average quantity for the month—making this the wettest December since 1886, or for fifteen years. So saturated did the ground become that very nearly the whole of the heavy rainfall came through the 2½ feet of soil in both the percolation gauges. On two occasions during the month the ground was covered with snow to the depth of 2 inches. Although such a wet month, the record of sunshine was rather in excess of the average. Both the strength of wind, and the amount of moisture in the air, were about seasonable.

THE YEAR.

This was another warm year. January proved warm, while February and March were unusually cold. The next seven months, with the exception of June, which was rather cold, were all more or less warm, July being exceptionally hot. The two closing months of the year were both cold. The rainfall proved very light; indeed, in the last forty-six years there have been only six other years as dry. The deficiency amounted to 5½ inches, which is equivalent to less in water to about twenty-six gallons on each square yard of surface in this district. It was not only a warm and dry, but also a very sunny year—with two exceptions, the sunniest in the last sixteen years.

RAINFALL OF THE LAST THREE MONTHS.

Since the winter half of the drainage year began in October, the total rainfall has come short of the average for those three months by about an inch. *E. M., Berkhamsted, December 31, 1901.*

MARKETS.

COVENT GARDEN, JANUARY 2.

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

| | s.d. | s.d. | | s.d. | s.d. |
|---|------|--------|---------------------------------|------|--------|
| Asparagus 'Fern,' bunch... | 1 | 6-26 | Lily of Valley, p. doz. bunches | 9 | 0-18 0 |
| Carnations, per dozen blooms | 1 | 0-20 | Maidenhair Fern, doz. bunches | 4 | 0-8 0 |
| Cattleyas, p. doz. | 9 | 0-12 0 | Mignonette, per doz. bunches | 4 | 0-6 0 |
| Encharis, p. doz. | 4 | 0-6 0 | Odontoglossums, per dozen | 2 | 6-6 0 |
| Gardenias, doz. | 1 | 6-20 | Roses, Tea, white, per dozen | 1 | 0-30 |
| Lilium Harrisii, dozen blooms | 5 | 0-8 0 | — Catherine Mermet, per doz. | 2 | 0-50 |
| Lilium lancifolm. album, p. doz. blooms | 3 | 0-40 | Smilax, p. bunch | 3 | 0-50 |
| Lilium rubrum, per dozen | 3 | 0-50 | Tuberose, per doz. blooms | 0 | 4-06 |
| Lilium longifirm. per dozen | 5 | 0-8 0 | | | |

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s.d. | s.d. | | s.d. | s.d. |
|------------------------------|------|--------|-------------------------------|------|--------|
| Adiantums, doz. | 5 | 0-7 0 | Ferns, small, per 100 | 4 | 0-6 0 |
| Arbor-vitæ, var., per dozen | 6 | 0-36 0 | Ficus elastica, ea. | 1 | 6-76 |
| Aspidistras, doz. | 18 | 0-36 0 | Foliage plants, various, each | 1 | 0-50 |
| — specimen, ea. | 5 | 0-10 6 | Lily of Valley, ea. | 1 | 0-30 |
| Cannas, per doz. | 18 | 0— | Lycopodiums, p. dozen | 3 | 0-40 |
| Crotons, per doz. | 18 | 0-30 0 | Marguerites, per dozen | 8 | 0-12 0 |
| Cyclamen, p. doz. | 8 | 0-10 0 | Myrtles, per doz. | 6 | 0-90 |
| Dracanas, var., per dozen | 12 | 0-30 0 | Palms, var., each | 1 | 0-15 0 |
| — viridis, doz. | 9 | 0-18 0 | — specimen, ea. | 21 | 0-63 0 |
| Ericas, var., doz. | 12 | 0-36 0 | Pelargoniums, scarlet, doz. | 8 | 0-12 0 |
| Euonymus, var., per dozen | 6 | 0-18 0 | — Ivyleaf, per dozen | 8 | 0-10 0 |
| Evergreens, var., per dozen | 4 | 0-18 0 | Spiræas, per doz. | 6 | 0-12 0 |
| Ferns, in variety, per dozen | 4 | 0-18 0 | | | |

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s.d. | s.d. | | s.d. | s.d. |
|--|------|--------|--------------------------------|------|--------|
| Apples, home-grown, Wellington, per bushel | 6 | 0-8 0 | Grapes, Gros Colmar, A. p. lb. | 1 | 6-20 |
| — Blenheim's, &c., p. bushel | 5 | 0-8 0 | — B., per lb. | 0 | 6-09 |
| — Nova Scotian, various, per barrel | 15 | 0-25 0 | — Almeida, per 12lb. | 4 | 6-50 |
| — King Pippins, per bushel | 5 | 0-7 6 | — per barrel | 14 | 0-15 6 |
| — Large Cookers, per bushel | 4 | 6-50 | Lemons, per case | 13 | 0-15 0 |
| Bananas, bunch | 6 | 0-90 | Melons, each | 0 | 6-13 |
| — loose, p. doz. | 1 | 0-16 | Oranges, Denia, per case | 8 | 0-10 0 |
| Chestnuts, per bag | 7 | 0-10 0 | — Jaffa, per case | 9 | 6-10 6 |
| Cobnuts, Kentish, per lb. | 0 | 8½— | — Jamaica, per case | 12 | 6— |
| Cranberries, case | 10 | 6— | — Navel, per case | 18 | 0— |
| — quart | 0 | 6— | — Tangierine, per case | 0 | 6-13 |
| Custard Apples, per dozen | 4 | 0-8 0 | Pears, in cases— | | |
| Grapes, Muscats, home-grown, per lb., A. | 4 | 0-60 | — Glout Moroccan & Easter | | |
| — B., per lb. | 1 | 6-30 | — Beurée | 11 | 0— |
| — Alicante, lb. | 0 | 8-10 | — stewing, per crate | 10 | 6— |

VEGETABLES.—AVERAGE WHOLESALE PRICES.

| | s.d. | s.d. | | s.d. | s.d. |
|------------------------------|------|--------|---------------------------------|------|--------|
| Artichokes, Globe, per dozen | 2 | 6-46 | Mint, new bunch | 0 | 6— |
| — Jerusalem, p. sieve | 1 | 0-16 | Mushrooms, house, per lb. | 0 | 8-09 |
| Asparagus Sprue, bundle | 0 | 8— | Onions, cases | 7 | 6-86 |
| — Giant | 10 | 6-15 0 | — Eng., per cwt. | 7 | 0— |
| — Paris Green | 5 | 0— | — in bags | 5 | 6-60 |
| Barbè de Capucine, bundle | 0 | 4— | — picklers, per sieve | 2 | 0-30 |
| Beans, dwf., house, per lb. | 1 | 6— | Parsley, per doz. bunches | 1 | 6-20 |
| — Madeira, p. bkt. | 2 | 0— | — sieve | 1 | 0-16 |
| Beetroots, new, per bushel | 1 | 3-16 | Parsnips, p. cwt. bag | 2 | 6-33 |
| Brussels Sprouts, sieve | 2 | 0-36 | Potatoes, per ton | 50 | 0-95 0 |
| Cabbage, tally | 4 | 0— | — new, per lb. | 0 | 4½— |
| — dozen | 0 | 9-10 | — new Teneriffe, per cwt. | 14 | 0-18 0 |
| Cardoons, each | 1 | 0— | Radishes, p. doz. bunches | 1 | 0-26 |
| Carrots, per doz. bunches | 1 | 2-26 | Rhubarb, Yorks, per dozen | 1 | 3-16 |
| — washed, bags | 2 | 6-36 | Salad, small, punnets, per doz. | 1 | 3— |
| — unwashed, per bag | 2 | 0— | Salsafy, per doz. bundles | 2 | 6— |
| Cauliflowers, doz. tally | 1 | 0-20 | Savoy, tally | 5 | 0-90 |
| — tall | 5 | 0-10 0 | Seakale, per doz. punts | 10 | 0-12 0 |
| Celeriac, per doz. | 2 | 0— | Shallots, per lb. | 0 | 2— |
| Celery, 12 bundles | 9 | 0-14 0 | Spinach, English, bushel | 2 | 0-30 |
| Chicory, per lb. | 0 | 3— | Stachys, lb. | 0 | 3— |
| Cress, per dozen punnets | 1 | 3— | Tomatos, Canary, boxes | 2 | 6-40 |
| Cucumbers, doz. | 2 | 0-70 | Turnip-Tops, bns. bag | 2 | 6— |
| Endive, new French, doz. | 1 | 3-16 | Turnips, per doz. bunches | 1 | 6-20 |
| Garlic, per lb. | 0 | 3— | — bag | 1 | 6-26 |
| Horseradish, foreign, bunch | 1 | 0-16 | Watercress, per doz. bunches | 0 | 6-08 |
| Leeks, 12 bunches | 1 | 6— | | | |
| Lettuces, Cabbage, per dozen | 1 | 6— | | | |

REMARKS.—Cucumbers are easier in price. Custard Apples fetch 4s. to 8s. per dozen. Chow-Chows, 1s. 6d. per dozen. Apples, such as Cox's Orange, Ribston, and King Pippins, are practically over, but some good

Blenheim Orange Pippins are still coming in, as well as Cockle Pippins. Italian Cauliflowers fetch 3s. 6d. to 4s. per basket of 18 heads. The supply of Mistletoe was greatly in excess of the demand, and many cratesful were thrown away.

POTATOS.

Dunbar Main Crop, 90s. to 95s.; Up-to-Date, 85s. to 90s.; Blacklands, 50s. to 55s.; various, 55s. to 80s. *John Bath, 33 & 34, Wellington Street, Covent Garden.*

SEEDS.

LONDON: January 1.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that to-day's seed market, as was to be expected, was thinly attended; and with the holiday spirit which prevailed, transactions were naturally few and unimportant. Meantime, both as regards Clover seeds and Rye grasses, a very firm feeling is current, and a healthy, active business in these and other articles is shortly anticipated. The high rates demanded for foreign Spring Tares have been stopping the English buying. There is no alteration this week in either Mustard, Rape, or Linseed; Canary-seed, although inactive for the moment, manifests a strong undertone. The mild weather diminishes the sale of boiling Peas and Haricot Beans. Some choice new Giant Scarlet Runners are now obtainable on very moderate terms.

FRUITS AND VEGETABLES.

GLASGOW, January 1.—The following are the averages of the prices during the latter half of last week:—Apples, Newtown Californian, 9s. 0d. to 11s. per case; Oregon, 12s. to 13s. do.; Nova Scotia Baldwins, 22s. to 26s. per barrel; Maine, 20s. to 24s. do.; Canadian, 22s. to 25s. do.; Grapes, 9d. to 1s. 6d. per lb.; home do., 1s. 2d. to 2s. do.; Oranges, Valencias, ordinary, 420's, 7s. to 8s. per case; do., large 470's, 9s. 6d. to 11s. do.; extra large do., 12s. 6d. to 14s. 6d. do.; large 714's, 9s. 6d. to 12s. 6d. do.; Jaffa, 8s. to 9s. do.; Mushrooms, 1s. 3d. to 1s. 6d. per lb.; Onions, Valencias, 5's, 7s. 6d. to 8s. 6d. per case; globes, 5s. 6d. do.

LIVERPOOL: January 1.—Wholesale Vegetable Market.—Potatoes, per cwt.: Up-to-Date, 2s. 2d. to 2s. 8d.; Main Crop, 2s. 9d. to 4s.; Lynn Grays, 2s. to 2s. 4d.; Bruce, 2s. 2d. to 2s. 8d.; Turnips, 6d. to 10d. per 12 bunches; Swedes, 1s. 4d. to 1s. 6d. per cwt.; Carrots, 3s. to 3s. 6d. per cwt.; Onions, foreign, 5s. 6d. to 6s. 6d. per cwt.; Parsley, 8d. to 1s. per dozen bunches; Cauliflowers, 1s. 6d. to 3s. doz.; Cabbages, 8d. to 1s. 8d. do.; Celery, 8d. to 1s. 6d. do. *St. Johns:* Potatoes, 1s. per peck; Cucumbers, 8d. to 1s. each; Grapes, English, 1s. 6d. to 2s. 6d. per lb.; do., foreign, 6d. to 8d. do.; Pines, foreign, 3s. 6d. to 6s. each; Mushrooms, 1s. per lb.; Filberts, 1s. do.

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending December 28, 1901, and for the corresponding period of 1900, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

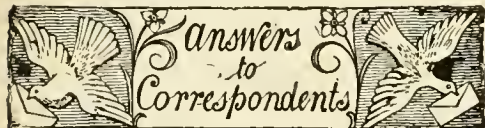
| Description. | 1900. | | 1901. | | Difference. |
|---------------|-------|-------|-------|-------|-------------|
| | s. d. | s. d. | s. d. | s. d. | |
| Wheat | 26 | 4 | 27 | 7 | + 1 3 |
| Barley | 25 | 10 | 26 | 8 | + 0 10 |
| Oats | 17 | 2 | 19 | 10 | + 2 6 |

CULTURAL MEMORANDUM.

TOMATOS.

It has been my practice for several years to sow seed of the Tomato for an early supply of fruit towards the end of the month of November, and invariably with very good results. When rearing plants at the dead of winter, it is very essential to keep them in a warmhouse or pit, as near to the glass as convenient, so that they may receive all the sunlight possible, otherwise growth will not be sturdy, or substance of leaf and stem firm; such plants should now be making growth slowly in 3-inch pots. At this season, perhaps two of the worst mistakes that can be made is to afford too much pot room and to afford much water, young Tomato plants in winter requiring but little water before the plants get fairly well furnished with roots. Another evil is to crowd the plants closely together, as to do this tends

to spindly growth. If no seed as yet has been sown, I would advise a sowing to be made without delay, sowing thinly and evenly in well-drained pots filled with a compost consisting of leaf-mould, loam, and sand, pressed by hand firmly. The seeds should be scarcely covered with fine soil. Stand the seed-pots in a frame or house having a temperature of 60° to 65°, and should the soil be fairly moist, no water should be afforded for some days, but this will depend in great measure upon the condition maintained in the house or frame, and the position in which the pots are stood or plunged. As soon as the seedlings are large enough to handle transplant them, putting two or three plants of equal size round the sides of 3-inch pots, using soil of moderate warmth. If the seedlings have spindled in the seed-pans, pot them down to the first pair of leaves. At this stage the plants must have no check whatever, and they should be placed in a moderately moist house, having a warmth of 60° to 65°, more or less, according to the state of the weather. When the roots touch the sides of the pots, repot this time singly, and using the same size of pot, or repot without disturbance into others of larger size; repeatedly repot when necessary till the plants come into 10 and 12-inch pots, a pair of plants in each. The best place in which to fruit the plants is a light span-roofed house, the stems being framed near to the glass on wires or rods arranged for the purpose. All lateral shoots must be pinched out, and some of the larger leaves reduced in length. Where growers for market adopt methods differing somewhat from the above, as for example, they drop the seeds in boxes of soil at about an inch apart, lift the seedlings when large enough and transfer them to small pots. Turfy loam that has been in stack for a year, and decayed manure, suit Tomatos when fruiting. H. Markham, Wrotham Park.



BOOKS: *Davenport.* The *Book of the Rose*, by Rev. Foster Melliard, published by Macmillan; small publications of the National Rose Society, as "Report on the Constitution of Rose Soils," "Report of Conferences held by the N.R.S. in 1900," "On Roses for Garden Decoration," "Hints on Planting Roses," "The Hybridisation of Roses," the N.R.S. Prize Essay.—Z. *How to Lay Out a Garden*, by A. Kemp (Bradbury, Agnew & Co., Ltd., 10, Bouverie Street, Fleet Street); *The Art and Craft of Garden-Making*, by T. H. Mawson (London: B. T. Batsford, 94, High Holborn); *Landscape Gardening*, by H. E. Milner (London: Simpkin, Marshall, Hamilton, Kent & Co., Stationers' Hall Court).

DECIDUOUS FLOWERING SHRUBS AND TREES FOR A NORTHERN COUNTY: *Agricola.* Amelanchier botryapium, double and single-flowered Cherries, Tulip-tree, Pyrus Malus (The Crab) in many varieties, Lilacs, Philadelphus coronarius and others, Forsythia viridissima, F. suspensa, Sturtia californica, Staphylea colchica, Sea Buckthorn, Catalpa syriaca, Viburnum Opulus, V. levigata, V. lantana, Kolreuteria paniculata, Almonds, and Prunus in variety.

DESTRUCTION OF PLANTS AND OTHER COARSE WEEDS IN TURF: J. A. L. We do not know the composition of Watson's Lawn Sand, but there are other substances that will make grass grow vigorously, viz., nitrate of soda, blood, and fish manures, applied when growth has begun, and again twice or thrice in the course of the summer. These may be

given together with dressings of loam, finely sifted, and wood-ashes. If the grass is thin, sow the finest lawn grasses and clovers, but these should contain no Rye-grass; cover thinly with loam, and roll or beat with a spade. This treatment must be persevered in for two or three years. Grass seeds may be sown in March and April, and dressings of loam, &c., given at the same time, or earlier. The effect of the extra vigour imparted to the grasses is to smother the weeds out of existence.

GROS COLMAN GRAPES DECAYING: A Subscriber. The inability to use fire-heat during the month of December has undoubtedly induced mouldiness in the bunches, as that spreads very rapidly from berry to berry. The damaged berries should be removed, stalks and all, and burned forthwith. If the flue or hot-water pipes cannot yet be made use of, place vessels containing quicklime in the house, or burn charcoal in braziers or old iron buckets on days when air can be given.

LAWN-SWEEPING MACHINES: W. S. If you will furnish us with your name and address, we shall be enabled to put you into communication with a firm dealing in these machines.

LILIU SPECIOSUM: E. B. The bulbs should be planted in a warm, sheltered situation, the ground, if possible, being shaded by dwarfier plants. The soil should be manured, and well worked and stirred to a depth of 1½ to 2 feet. Make firm and plant the bulbs in late autumn, or immediately they are obtainable at the florist's, putting them at the least 6 inches deep, with sand above and below them. If rats and mice be not feared the bulbs may be left in the ground when the stems die down, otherwise remove them to pots, half filled with loamy soil, and preserve them in a cold pit bedded in fresh leaves, so as to keep the frost from them, but not in such bulk as to impart heat, and cover the pots with slates, &c., so that mice or rats cannot enter. See an article on Lilies, p. 23, in the issue of the *Gardeners' Chronicle* for July 13, 1901.

MESEMBRYANTHEMUMS AND ALTERNANTHERAS: W. M. You cannot raise the variegated forms of either from seed so as to be available for bedding out, but you would do well to purchase stock plants, and raise plants from cuttings. The first should be started in an intermediate temperature, and the second in the stove, say from 60° to 75°. It will be soon enough in February to make a start with the propagation of the plants.

MUSHROOMS: J. Hamlin. Withdraw them from the soil with as little disturbance of the soil as possible. It is not a safe practice to cut off the stem at the ground-level, and leave the root and remains of the stem to decay in the bed.

NAMES OF FRUIT: *Fairlawn.* 1, Beurré d'Arenberg; 2, Notaire Minot; 3, Caroline; 4, unknown; 5, Cockle Pippin; 6, Rymer; 7, Nelson Codlin.—T. H. B. 1, Bergamotte Dussart; 2, Royal Russet; 3, Harvey's Pippin; 4, Hunt's Deux Ans.

NAMES OF PLANTS: F. E. S. & Co. We cannot undertake to name varieties of Chrysanthemum, or other "florists'" flowers.

OLD GARDENING BOOKS: F. W. M. The books named have little horticultural value. Book collectors might value them as curios, and the prices given in your note are the utmost you could obtain for them.

PEARS: R. W. R. The supposed B. Diel was much over-ripe, besides being damaged, so that it, and the long Pear, also over-ripe, could not be identified. The round Pear we will endeavour to name for you in our next issue.

PETROLEUM AND PARAFFIN: A Reader. The first consists of several substances of a bituminous nature found in rocks in many parts of the globe. Liquid petroleum or mineral oil is found in all localities where bitumen or asphalt exists in quantity in

the rocks. It varies in composition and density according to whether it be obtained from shallow or deep wells, the former giving the heaviest and darkest product. Paraffin is mostly obtained by destructive distillation in retorts of shales, cannel-coal, wax, peat, wood, &c.

ZONAL PELARGONIUM: J. Hamlin. As it is during the winter and late autumn that these plants when grown in pots are most valued, the gardener will in a measure be guided by the state of the weather in applying artificial heat. On sunny days, not much heat may be needed, as but little ventilation is given and in bad weather scarcely any, although what is called "a chink of air" should always be afforded when frost is not severe. Generally speaking, the temperature may range by day from 55° to 60° with sunshine, 5° less in cloudy and very cold weather, and by night 45° to 48°.

COMMUNICATIONS RECEIVED.—R. T., Jamaica—C. S. S., Boston, U.S.A.—W. E. G.—R. D. B.—J. W.—A. H., Pennsylvania—J. B. Gateshead—W. J. G., Exmouth—Von Saint Paul, Fischbach—M. M., Geneva—R. F. K.—L. C.—H. W. W.—W. B. H.—T. H. E.—J. W. O., with thanks—A. J. C.—W. G. S.—N. E. D., Gothenburg—G. M.—L. U. G.—D. W.—F. W. F.—G. N.—J. O'B.—A. H. S.—R. J. L.—W. Baldwin, too late to be of interest.—J. V. & Sons—Charles Sharpe & Co.—W. M.—S. A.—G. P., Naples—L. L., Brussels—C. The acknowledgment of the receipt of a communication by no means implies that it will be published.—O. O. W.—The Dean of Canterbury—H. Berry—J. M.—E. C.—A. S. & Sons—Neil Sinclair—D. R. W.—S. B. D.—J. A.—C. T. D.—R. B. L. & Sons—W. F. E.—C. C. H.—R. B.—P. B.—E. S.—A. A. Fabius—"Bristol"—Little & Ballantyne—R. W. R.—Witty—T. R.—H. R.—G. G.

CATALOGUES RECEIVED.

SEEDS.

DAVID W. THOMSON, 24, Frederick Street, Edinburgh.

MISCELLANEOUS.

THE VINERIES, LTD., Vineries Road, Acock's Green, Birmingham—Dahlias, Hardy Flowering Plants, Fruit Trees, and General Nursery Stock.

W. WELLS & CO., LTD., Earlswood Nurseries, Redhill, Surrey—Supplement to Chrysanthemum List.

S. MORTIMER, Rowledge, Farnham, Surrey—New Cactus Dahlias.

W. J. GODFREY, Exmouth, Devon—Chrysanthemums, &c.

TOOGOOD & SONS, Southampton—Garden Seeds, &c.

J. WOOD, Penrith—Garden Seeds, &c.

BROWN & WILSON, 10, Market Place, Manchester—Garden Seeds, &c.

PROTHIER & MORRIS, 67 & 68, Cheapside, London—Register of Nurseries, Market Gardens, Farms, Florists, Seed Businesses and Partnerships to be let or sold.

W. PAUL & SON, Waltham Cross, Herts—Seeds and Sundries.

LEGGATT, BLAKE & TYE, Seed Merchants, Guildford—Sweet Peas, with Cultural Notes.

T. METHVEN & SONS, 15, Princes Street, and Leith Walk, Edinburgh—Seeds and Imperishable Labels.

DOBIE & CO., Rothesay, N.B.—Seeds, Hardy Plants, &c.

J. FEED & SON, West Norwood, London, S.E.—Seeds, &c.

BELL & BIERSTEDT, Leith—Wholesale List.

HOWDEN & CO., Old Post Office Buildings, Inverness.

LITTLE & BALLANTYNE, Carlisle.

MCHATTIE & CO., Grosvenor Nurseries, Handbridge; and Northgate Street, Chester.

GARDENING APPOINTMENTS.

MR. G. H. MARTIN, for the last three years Indoor Foreman at The Gardens, Killoch Castle, Rum, by Oban, N.B., as Head Gardener to Mr. SMITH, Tranby, Park, Hesse, Hull.

MR. NEIL MCFADYEN, for the last five years at Dalquharan Castle, Dailly, Ayrshire, as Gardener and Land Steward to PRINCE SMITH, Esq., Glenlee Park, New Galloway, N.B.

MR. E. BRANSON, for twenty-one years Gardener at the Rectory, Nowell, Notts, as Gardener to Mr. FISHER, Bramcote Hills, near Nottingham.

MR. G. WATTS, late Head Gardener at Wroxham Hall, Norfolk, as Head Gardener to Lt.-Col. Sir FREDK. GARDEN, Bart., Stargroves, Newbury, Berks, commencing his duties on January 1.

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.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES of GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN and COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

APRIL.

| | | | |
|----|-----|--|--|
| 1 | S | Boy. Roy. Soc. meet. at London meet. | Society's France d'Hort. Orman furniture Soc. |
| 2 | S | Clam. Nyn. des Hort. Belges, Ghent, meet. On last quart, 10h. 30m. north. Thomas Bacon died, 1865. | |
| 3 | M | Scottish Hort. Assoc. meet. R. B. Laird d. | |
| 4 | W | 1865. Sun rises th. 39m. | |
| 5 | F | 1865. Sun rises th. 39m. | |
| 6 | Tu | Lunatic Soc. meet. | |
| 7 | W | | |
| 8 | S | Princess Alexandra (now Queen) arrived, 1864. | |
| 9 | 4th | <i>Sunday in Lent.</i> Mean temp. av. at Chiswick, 40° | |
| 10 | M | King Edward VII. mar. 1869. New Moon | |
| 11 | Tu | Boy. Royal Society's Committee meet. | |
| 12 | W | Sun rises th. 24m.; sets th. 47m. | |
| 13 | Th | Duke of Cumberland mar. 1879. | |
| 14 | F | | |
| 15 | S | | |
| 16 | S | German Gard. Soc. London, meet. | |
| 17 | 4th | <i>Sunday in Lent.</i> Mean 1st quart, 10h 15m. at. Sun rises th. 10m. | |
| 18 | M | St. Patrick's Day. | |
| 19 | Tu | Mean Temp. av. at Chiswick, 49°. | |
| 20 | W | Torrey Gardeners' Assoc. Spring Show. Lunatic Soc. meet. | |
| 21 | F | Spring quarter begins. Hort. Sh. at Man- chester Free Trade Hall. | |
| 22 | S | Sun rises th. 1m. 31m. 6h. 14m. | |
| 23 | 4th | Sun rises th. 1m. 31m. 6h. 14m. | |
| 24 | M | Sun falls th. 36. 24m. moon. died, 1865. | |
| 25 | Tu | Lady Jay. Roy. Hort. Soc. Comm. meet. | |
| 26 | W | Hilary Law Sitings end. | |
| 27 | Th | <i>Good Friday.</i> | |
| 28 | F | | |
| 29 | S | Sun rises th. 45m. | |
| 30 | S | <i>Easter Sunday.</i> Crimean War ended, 1856. | |
| 31 | M | Bank and General Holiday. Jersey Agr. & Hort. Soc. Exhib. opens. | |

| | | | |
|----|----|--|--|
| 1 | Tu | Not Rose Soc. Met. Exh. 7 th to 10 th of Garden (continually) Festival, Hort. Assoc. met. | |
| 2 | W | Roy. Hort. of Southampton Hort. and Rose Soc. 1 st to 4 th of May (2 days) Croyleton Hort. Soc. 1 st to 4 th of May (2 days) | |
| 3 | Th | Roy. Soc. 1 st Richmond Hort. Soc. Exh. Silbury Colchester Rose & Hort. Soc. Exh. | |
| 4 | F | Rose Soc. Southern Sh. in conjunction with Devon & Exeter Hort. Soc. Exh. Guys. Show at Wilney. | |
| 5 | S | Roy. Bot. Soc. Meet. Soc. Fran. d'Hort de France. New Moon 10 th of May. Soc. London in conjunction with New Moon 10 th of May. | |
| 6 | S | Chambr. Synd. des Hort. Belges, Ghent, meet. Roy. Soc. York Plurists' Members Exh. | |
| 7 | M | Roy. Hort. Society's Committee meet. Wolsingham Falm. Hort. Sh. (3 days). | |
| 8 | Th | Newcastle-on-Tyne Hort. Sh. (3 days). | |
| 9 | W | Bekeham Hort. Soc. Exh. | |
| 10 | F | Johnston 1 st to 10 th of May. | |
| 11 | F | Walsingham Hort. Soc. Exh. | |
| 12 | S | Mean first quart. 10 th 4 th May, 1861. | |
| 13 | S | 7 th Sunday after Trinity. | |
| 14 | M | St. Swthin. | |
| 15 | Th | Roy. Bot. Soc. Meet. | |
| 16 | F | Rose Shows at Halifax and Hellenborough. | |
| 17 | Th | Mean quart. av. at Chiswick, 62.2° | |
| 18 | F | Walsingham Hort. Soc. Exh. | |
| 19 | S | Walsingham Hort. Soc. Exh. at Manchester. | |
| 20 | Th | Not Rose Soc. Northern Exh. at Manchester. | |
| 21 | F | German Gard. Soc. London meet. | |
| 22 | S | 8 th Sunday after Trinity. Moon full, 4 th . | |
| 23 | Th | Roy. Hort. Society's Committee meet. 1865. | |
| 24 | F | Roy. Hort. Society's Committee meet. 1865. | |
| 25 | Th | Mean quart. av. at Chiswick, 62.8°. | |
| 26 | F | St. James. | |
| 27 | S | Irish Church disestablish, 1869. | |
| 28 | S | 9 th Sunday after Trinity. | |
| 29 | M | Mean last quart. 5 th 1 st June, 1861. | |
| 30 | Th | Mean last quart. 5 th 1 st June, 1861. | |
| 31 | F | Midland Camdnon & Pir. Soc. Sh. at Birmingham, 2 days (subject to alteration). | |
| 32 | Th | G. Cudbert, sen. d. 1901. | |

AUGUST.

| | | | |
|-----|----|---|--|
| 1 | Tu | Not Rose Soc. Met. Exh. 7 th to 10 th of Garden (continually) Festival, Hort. Assoc. met. | |
| 2 | W | Roy. Hort. of Southampton Hort. and Rose Soc. 1 st May (2 days) Croydon Hort. Soc. 1 st May (2 days) | |
| 3 | Th | Rose Soc. 1 st Richmond Hort. Soc. Exh. Silbury Colchester Rose & Hort. Soc. Exh. | |
| 4 | F | Rose Soc. Southern Sh. in conjunction with Devon & Exeter Hort. Soc. Exh. Guys. Show at Wilney. | |
| 5 | S | Roy. Bot. Soc. Meet. Soc. Fran. d'Hort de France. New Moon 10 th of May. Soc. London meet. New Moon 10 th of May. | |
| 6 | S | Cham. Synd. des Hort. Belges, Ghent, meet. Roy. Soc. York Plants Members Exh. | |
| 7 | M | Roy. Hort. Society's Committee meet. Wolsingham Fyne Hort. (day) | |
| 8 | Th | Newcastle-on-Tyne Hort. Soc. (3 days). | |
| 9 | W | Beckham Hort. Soc. Exh. | |
| 10 | F | Johnston 1 st 1907; 2 nd 15 th May, 1961. | |
| 11 | F | Walsley Hort. Soc. Exh. | |
| 12 | S | Mean first quart. 10 th 47 th of May. | |
| 13 | S | 7 th Sunday after Trinity. | |
| 14 | M | St. Swthin. | |
| 15 | Th | Roy. Bot. Soc. Meet. | |
| 16 | F | Rose Shows at Halifax and Halesborough. | |
| 17 | W | Mean quart. av. at Chiswick, 62.2 nd of May. | |
| 18 | Th | Walsley Hort. Soc. Exh. | |
| 19 | S | Walsley Hort. Soc. Exh. open. | |
| 20 | S | Not Rose Soc. Northern Exh. at Manchester. | |
| 21 | F | German Gard. Soc. London meet. | |
| 22 | F | 8 th Sunday after Trinity. Moon full, 4 th . | |
| 23 | W | Roy. Hort. Society's Committee meet. 18 th . | |
| 24 | Th | Roy. Hort. Society's Committee meet. Prof. Baenigsen died at Chiswick, 62-8 ^o . | |
| 25 | F | Mean quart. av. at Chiswick, 62-8 ^o . | |
| 26 | F | St. James. | |
| 27 | S | Irish Church disestablish, 1869. | |
| 28 | S | 9 th Sunday after Trinity. | |
| 29 | M | Mean last quart. 5 th 1 st of June. | |
| 30 | W | Mean last quart. 5 th 1 st of June. | |
| 31 | Th | Mean last quart. 5 th 1 st of June. | |
| 32 | F | Mean last quart. 5 th 1 st of June. | |
| 33 | S | Mean last quart. 5 th 1 st of June. | |
| 34 | S | Mean last quart. 5 th 1 st of June. | |
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| 98 | F | Mean last quart. 5 th 1 st of June. | |
| 99 | S | Mean last quart. 5 th 1 st of June. | |
| 100 | S | Mean last quart. 5 th 1 st of June. | |

DECEMBER.

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| 1 | S | Soc. Franc. 3 Hort. de la Laurens meet. 1896. |
| 2 | S | Oppler died, 1900. London meet. June 1896. |
| 3 | S | Chamb. byrd. des Mont. Belges, (thent meet. 1896.) |
| 4 | M | 1895. Soc. des Com. meet. 1896. Chrys. |
| 5 | M | 1895. Soc. des Com. meet. 1896. Chrys. |
| 6 | M | 1895. Soc. des Com. meet. 1896. Chrys. |
| 7 | M | 1895. Soc. des Com. meet. 1896. Chrys. |
| 8 | M | 1895. Soc. des Com. meet. 1896. Chrys. |
| 9 | M | 1895. Soc. des Com. meet. 1896. Chrys. |
| 10 | M | 1895. Soc. des Com. meet. 1896. Chrys. |
| 11 | M | 1895. Soc. des Com. meet. 1896. Chrys. |
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| 14 | M | 1895. Soc. des Com. meet. 1896. Chrys. |
| 15 | M | 1895. Soc. des Com. meet. 1896. Chrys. |
| 16 | M | 1895. Soc. des Com. meet. 1896. Chrys. |
| 17 | M | 1895. Soc. des Com. meet. 1896. Chrys. |
| 18 | M | 1895. Soc. des Com. meet. 1896. Chrys. |
| 19 | M | 1895. Soc. des Com. meet. 1896. Chrys. |
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| 21 | M | 1895. Soc. des Com. meet. 1896. Chrys. |
| 22 | M | 1895. Soc. des Com. meet. 1896. Chrys. |
| 23 | M | 1895. Soc. des Com. meet. 1896. Chrys. |
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| 25 | M | 1895. Soc. des Com. meet. 1896. Chrys. |
| 26 | M | 1895. Soc. des Com. meet. 1896. Chrys. |
| 27 | M | 1895. Soc. des Com. meet. 1896. Chrys. |
| 28 | M | 1895. Soc. des Com. meet. 1896. Chrys. |
| 29 | M | 1895. Soc. des Com. meet. 1896. Chrys. |

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MAWLEY, E., "Rosebank," Berkshire.
PAUL, G., Chessum.
PAUL, W., Waltham Cross.
POTTER, Sir Michael, Cambridge.
HENDSON, Rev. Prof.
SODDY, Dr., Kew.
SOLMS, Count, Strassburg.
TRUFFAUT, G., Versailles.
WALLACE, Alfred, Dr.
WEBSTER, Dr., Manchester.
ZACHARIAE, Professor, Hamburg.



CEDAR OF LEBANON AT ADDINGTON PARK, SURREY.



THE

Gardeners' Chronicle

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THE GARDEN AS A HOBBY.

IN an article under the above heading, which appeared on December 14, Dr. Bonavia ridicules the advice given by Mr. F. T. Mott in one of his papers on "A Midland Garden," to the effect that "old men who retire from business and have nothing to do but eat and sleep, and read the papers, die off rapidly. They should take to gardening, and do part of the actual work themselves." According to Dr. Bonavia, it is useless for anyone who has not studied gardening from childhood to attempt the acquirement of even the rudiments of that art in advanced years. The poor retired business man is portrayed as incapable of doing anything in the garden with intelligence, and as being ignorant even of the rational method of plucking a Rose. Such a sweeping assertion is calculated to carry despair to the heart of every inoffensive leisured individual who contemplates solacing his declining years by taking an intelligent interest in his garden, and may well add yet another to that inane crowd of "creatures," who are pictured "waiting for death" in their club armchairs. But let the successful business man, when he seeks his well-earned retirement, and turns his thoughts gardenwards, take heart of grace, for there are many, whose knowledge of garden-lore is by no means limited, who will echo the comforting advice given by Mr. Mott, and assure him that there is no valid reason why

that intelligence which has led him to success in business should utterly desert him as soon as he sets foot in his garden. That a life-long apprenticeship to gardening is of inestimable worth will be admitted by all who are conversant with the subject practically and theoretically; but there is no more reason for a man's refusal to turn his attention to horticulture because he is not qualified to take the place of the late Sir John Lawes or Sir Henry Gilbert than there is for a child's objection to learn the alphabet because it cannot read a book.

There was a time when those eminent men knew nothing about soils; and when the writer of the most learned book could not read. Knowledge comes by slow degrees, and never attains perfection. There is no finality in learning. The more a man knows of any subject, the more conscious he becomes of how much pertaining to it there still remains to be learnt. The wisest among us never cease being learners. If a man were to set himself to the study of a subject from his earliest childhood to his death-bed, he would not learn all that might be known of it. Years, perhaps ages later his knowledge would be amplified in directions he never dreamed of. If, therefore, any have perforce delayed their initiation into the mysteries of Flora's lore until maturer years, let none dissuade them from devoting the remainder of their lives to its study, but rather urge them so to do. They will not in all probability become deeply learned, and they can no more hope to acquire the experience possessed by those who have been studying from their youth upwards, than can the man who takes to golf in middle age expect to rival the supple agility of the player who has wielded a club from a lad, but they will gain useful knowledge even in this incarnation, knowledge acquired amid the delightful surroundings of the fresh air of heaven, and the breath of countless fragrant flowers.

There is much that the veriest tyro in gardening can do without running the risk of committing any fatal blunder. Staking and tying plants requires an artistic eye, rather than horticultural knowledge. Picking off dead flowers and seed-pods, training climbers, syringing aphid-infected foliage with insecticide, occasional use of a light lawn-mower, and numerous little odd jobs, that, although they are done in the garden can scarcely be termed gardening, will suffice to employ the beginner's time. Bulb-planting and seed-sowing are not difficult operations, and advice on these and kindred subjects is given in detail in gardening books, ranging in price from a shilling to a sovereign or more, advice that is far more readily assimilated by the trained brain of the business man than by the undeveloped mind of youth.

Most of us can number among our friends and acquaintances amateurs who are devotedly attached to their gardens, and possessed of a fund of valuable horticultural knowledge, but who did not commence to make gardening their study until middle life or later; nevertheless much good work has been done and is being done by such as these in widening the appreciation of gardens, independently of the enjoyment they themselves experience in performing their labour of love.

Hybridising offers a wide and interesting

field of work to those who take up gardening in their later years. It is no difficultly-acquired art, but its possibilities are infinite. Thousands of seedlings may doubtless show no improvement on their parents, but there is always a chance of a break in a new direction.

Humility is, perhaps, a somewhat rare virtue, yet it is one that should be cultivated by every aspirant to knowledge in gardening matters, for the first advances are only to be made by the help of the oral or printed advice of others. It is very true, as stated by Mr. Mott, that "gardening is an art full of complex details, and cannot be taught by books alone. Experience and practice are necessary to every gardener." Personal experience is certainly the best teacher, but at the first there is none to guide, and until its lessons are slowly and reverently garnered, each day adding something to the priceless store, the teachings of those qualified to instruct are the only stand-by.

The beginner generally credits the acknowledged experts of the art with an omniscience that is almost supernatural. Later on he finds to his comfort that no human mind is capable of acquiring and retaining an exact knowledge of the countless genera of trees and plants in the world in all their endless varieties.

Many years ago, when I first began to interest myself in horticulture, I was, although fortunate in having known the care of a flower-loving mother such as Dr. Bonavia appreciatively describes, painfully conscious of my ignorance. As time passed on, I found that even the greatest gardeners did not know everything. The best dictionary of gardening gave a white-flowered plant as bearing purple blooms; another dictionary classed a certain deciduous shrub as evergreen; one of the most widely-known men in the gardening world hesitated to name a variety of German Iris; another had no knowledge of a particular florists' Tulip, and so on. These instances, which at the time proved somewhat disquieting, led to the consideration that the sum of gardening knowledge now at our disposal was accumulated, not by each master mind learning afresh everything that had been learnt before, but by working independently in different directions and adding the wisdom thus gained to the general store. The specialist in Irises has not necessarily an intimate acquaintance with all the Composites of the American continent, nor does it follow that because a man possesses a unique knowledge of Orchids that he is competent to pass an exhaustive examination on the Coniferae.

Dr. Bonavia's story of the old gentleman who enquired if there was any connection between a Datura and a Date-tree, points to the folly of jumping at conclusions in subjects with which one is totally unacquainted, and emphasises the fact that in such cases silence is especially golden. Like ignorance would be displayed by all sorts and conditions of men who ventured to talk on unfamiliar subjects, and the opinions of a gardener on the crojaek-yard of a clipper would doubtless appear as ludicrous to a sailor as did the old gentleman's well-intentioned but unfortunate attempt to interest himself in horticulture to your correspondent. Most probably the gentleman in

question was not among those under consideration, who are anxious to acquire a certain insight into the pleasures of gardening—pleasures that are unfortunately not unalloyed with possibly salutary disappointments. If, however, he belongs to that much-to-be-applauded body, and applies himself to his new hobby with an earnest desire to gather what knowledge he can concerning it, there is no question but that his efforts will eventually be crowned with a qualified measure of success. He may but master the alphabet of gardening, but even that is something gained, for it may be laid down as an axiom that the more in number are those that embark in that entrancing pursuit, the more will the health and happiness of the world be augmented. *S. W. Fitzherbert.*

NEW OR NOTEWORTHY PLANTS.

CATTLEYA × ROTHWELLÆ.

A NEW hybrid, between *C. Eldorado* and *C. Bowringiana*, raised in the collection of Mr. J. E. Rothwell, Brookline, Massachusetts. It is described by Mr. Oakes Ames in *American Gardening*, 1901, vol. xxii, p. 845, fig. 174, under the name of *C. × Portia* var. *Rothwelliæ*, as follows:—

"Plant intermediate . . . sepals oblong; petals broadly ovate; lip with contracted, apical lobe; sepals, petals, and lip pale purple-red, the apical lobe of the latter and the margins of the side lobes deep rich purple-red; throat rich yellow; flowers about 4½ inches across."

An excellent photograph is given showing the whole plant bearing four flowers.

The publication of this hybrid, under the name of *C. × Portia*, raises a rather interesting question. Mr. Oakes Ames, apparently following Veitch's Manual, makes *C. Eldorado* a variety of *C. labiata*, and as the hybrid between *C. Bowringiana* and the latter is known as *C. × Portia*, he therefore applies that name in this case.

But this rather complicates matters, because according to the same system, *C. Warscewiczii* would also be considered a variety of *C. labiata*, and a hybrid between *C. Bowringiana* and *C. Warscewiczii*, named *C. × Wendlandiana* was described in 1894 (*Orch. Rev.*, 1894, p. 144), while *C. × Portia* was first published in 1897 (*Orch. Rev.*, 1897, p. 375).

Mr. R. A. Rolfe in his revision of the genus *Cattleya* (*Orch. Rev.*, 1895, p. 269), makes both *C. Eldorado* and *C. Warscewiczii* distinct species, each having its own set of varieties, and on the whole, this seems to be the most convenient arrangement.

In accordance with this, therefore, I venture to amend the name of this hybrid, as above. *C. C. Hurst, F.L.S.*

VITIS (?) VOINIERIANA.

Under this name M. Charles Baltet describes in the current number of the *Revue de l'Horticulture Belge*, a Vine introduced from Tonkin and dedicated to M. Voinier.

As the flowers have not been examined, the position of the plant is uncertain, but the leaves are palmatisect, each of the five segments being stalked, about 20 cent. long, rounded at the base, oblong-acute, coarsely toothed. M. Baltet says it will be a delight to plant-lovers, for it will make a splendid adornment of our winter gardens. Its characteristics consist in its vigorous habit, and superb evergreen foliage.

ORCHID NOTES AND GLEANINGS.

CATTLEYA × CYBELE (GASKELLIANA × LUDEMANNIANA).

THE union of two rather widely separated forms of *Cattleya labiata* has, in this showy hybrid, brought about pleasing results, even although the new arrival still remains a form of *Cattleya labiata*. Its chief features are such as might be expected, and the notable departure is in the almost abnormal breadth of the petals, which in a great degree resemble those of *C. quadricolor* (*chiocensis*). The general appearance of the flower is of a very fine form of *C. Trianei*, with the labellum displaying the trumpet-shaped expansion of the front and side lobes of the lip, inherited from *C. Ludemanniana*. The flower, which is 6 inches across, has petals over 2½ inches wide, both sepals and petals being white, delicately tinged with rose. The base of the lip is pale rose, with purple lines running up the middle, and extending into two yellow patches in the middle area displayed as in *C. Warscewiczii*. Front of the crimped labellum bright reddish-purple. It is one of the novelties which the raisers, Messrs. Jas. Veitch & Sons, of Chelsea, were prevented by the frost from showing at the December display of the Royal Horticultural Society.

BARKERIA SKINNERI.

A splendid inflorescence of twenty-five bright magenta-purple flowers, with orange-coloured erect to the lip, is sent by Joseph Broome, Esq., Sunny Hill, Llandudno (gr., Mr. A. C. Axtell), where it has been in flower for some time. It is one of our brightest-coloured and most elegant winter-flowering Orchids, but it does not thrive so well in towns as do some other species of Orchids. In the bright sunlight and pure air of Llandudno the colours of the flowers are very bright. It is botanically an *Epidendrum*, and was first discovered by Mr. G. Ure Skinner, growing on trees in the mountains of Guatemala, in 1835, a region which possesses an uniformly cool climate. In our glasshouses it grows best on a raft, or in shallow baskets suspended in an airy intermediate-house, when making its growth; but when at rest, the plant should be kept dry in a coolinery or greenhouse, in the full sunshine. A sojourn in the open air, suspended from the branch of a tree in the hot weather, has been found to benefit it.

LYCASTE SKINNERI.

Some magnificent flowers of this species are kindly sent by J. Broome, Esq., Sunny Hill, Llandudno, who calls attention to their gigantic size. The largest has a flower-stem about 14 inches in length. The sepals and petals are tinted with rose, and the front lobe of the lip is of a purplish-rose colour. The flower is of fine form, the sepals each 3½ inches long and 2½ inches broad. In another of the flowers the segments are tinged with purple on the inner halves, and the rose-purple lip is bordered with white. A fine flower of the singular *Lycaste gigantea*, and some good flowers of *Cypripedium × Lecanum* are also sent, which in all cases show remarkable development and bright colours. *Jas. O'Brien.*

PLANT NOTES.

ANGELONIA GRANDIFLORA ALBA.

No one requiring a graceful and free-flowering plant for autumn and winter decoration should fail to procure a packet of seed of this plant, sent out last year, I believe, by Messrs. James Veitch & Sons. It is a

perennial, but for practical purposes may be treated as an annual. It grows to a height of from 18 inches to 2 feet. Seed may be sown in the spring, and the plants grown in an intermediate-house, and flowered in 5 or 6-inch pots. If the points of the shoots are pricked out once or twice during growth, extra bushiness will result. The extremely numerous flowers are a creamy-white, and slightly aromatic. It reproduces itself true from seed, with occasionally a break in colour, which might afford scope to the ingenuity of the hybridiser. *James Baxter.*

THE ROSARY.

ROSE GENERAL SHABLIKINE.

A SEASON or two back this Rose was brought into some prominence in the horticultural papers, but since I have seen little notice of it. A dozen plants obtained last planting-time from a continental source have given great pleasure. Though the plants were small when received, they flowered fairly well during the past season, and gave us a number of their delicately-tinted flowers. It appears too small for exhibition, but for those who love Roses apart from that consideration, I would advise the purchase of a plant or two. The colour of the blooms is somewhat like that of *Madame Lambard* but deeper, yet clearer and brighter; in the bud and half-opened stages a really charming flower. *J. W.*

THREE PALMS OFTEN WRONGLY NAMED.

ROBERT BROWN, in his *Prodromus Floræ Novæ Hollandiæ*, gives the character of a new genus of Palms, which, in honour of Francis Lord Seaforth, he named *Seaforthia*. The species which he created was called by him *S. elegans*, R.Br. Amongst the characteristics, R. Brown mentions the fronds with pinnules erose at the apex. He says that this genus is nearly allied to *Caryota*. The characteristic apex of the pinnules much attracted him. This plant was afterwards united with *Ptychosperma* of Labillardière, and named *Ptychosperma elegans*, Blume.

Afterwards Sir W. Hooker gave in the *Bot. Mag.* a description and figure of a Palm under the name of *Ptychosperma elegans*, which differs from *P. elegans*, Bl., in its pinnules, which are not erose but acuminate at the apex. I have long wondered how it could be possible to confuse two such distinct plants, and I think that the mistake arose from the geographical distribution of the two plants. Robert Brown's plant is a native of Queensland, where it grows near Endeavour River, Cape York, Sunday Island, Cumberland Islands, and Rockhampton. The Hookerian plant is also a native of Queensland, growing at Sunday Island, the east coast of Cape York, and Rockhampton. I suppose that seeds arrived at Kew from one of these places, that it was known from Brown's paper that the Palm called by him *Seaforthia elegans* grew there, and that the seedlings were therefore named *Seaforthia elegans*. Those who know how sometimes names are affixed in botanical gardens by the under-gardeners will not be astonished at this.

The Hookerian Palm belongs to another genus, named at a different time. Wendland, who distinguished the genus at once, called it *Archontophoenix Cunninghamii*. Another species of this genus is *A. Alexandræ*, Wendl., very similar in habit to *A. Cunninghamii*, but differing by its segments, which are only green

above, whilst underneath they are ashy glaucous or white. The plant is also a native of Queensland, where it grows at Rockingham Bay. As the general habit is very similar

true *Ptychosperma elegans* (fig. 7), Blume, viz., the *Seaforthia elegans* of R. Brown, is met with but rarely in European gardens. What is cultivated under this name in most cases

youth they form bifid leaves, the blade almost horizontal. After having made some four to six such leaves, each larger than the foregoing, there appears a fully pinnate leaf, much



FIG. 6.—ARCHONTOPHOENIX ALEXANDRÆ. (SEE P. 18.)

to *A. Cunninghami*, it is often met with under the name of *Seaforthia elegans*. Our illustrations show the totally different habits of *Ptychosperma* and *Archontophoenix*. The

is either *Archontophoenix Cunninghami*, or *Archontophoenix Alexandræ* (fig. 6). The latter are decorative hardy Palms, forming on the Riviera very fine high-stemmed specimens. In

differing in mode of growth from *Phoenix* and other pinnatisect-leaved Palms. On the Riviera the plants were exposed to 6½° R. without any harm. For rooms these two species are very

good plants, growing rapidly. The two photographs (figs. 6, 7) showing plants in the Botanic Garden at Buitenzorg, were kindly sent me by Prof. Treub. Dr. Udo Dammer, Gross Lichterfelde, Berlin.

UNITED STATES OF AMERICA.

GARDENERS IN THE UNITED STATES.

It is of America as a field for emigration that I should like chiefly to speak. The great number of good men advertising for positions, and the low rate of wages paid to those engaged, shows, I think, that some outlet is necessary in order that the overflow of talent existing in England in the horticultural line shall not flood the market to a more disastrous extent than it does at present. To my mind, the United States provide that outlet. My time here has been short, but it does not require a long time for one to see that here good gardeners are as scarce as they are abundant in England; and my eight months' experience of this State has proved to my satisfaction that there is room here for many of those who feel the ill-effects of the keen competition at home. That I, in applying for the post I now hold (being less than three months here, and almost entirely ignorant of the methods in vogue), should have received the preference over a dozen established and capable applicants, and the fact that all the important positions around here are held by men who received their training in one or other of the British Isles, proves that gardeners from them are looked upon very favourably by Americans generally.

A man who does not mind work, and is not over-particular what he does whilst waiting his opportunity, need not be out of work a week, and can earn good wages whilst looking for better. A head man receives from 50 to 70 dollars per month, with house, vegetables, milk, and often coals, and sometimes as much as 80 dollars; and positions are not so scarce or hard to obtain as in England.

But it is the young man who stands the best chance—one who can manage a greenhouse or two, and who is willing to lend a hand outside when required. There is a dearth of such men. I know gardeners who have been trying for weeks for such places without success. My best man receives 25 dollars per month, with board and lodging. The board is superior to that which a young gardener is usually able to provide for himself at home, and I have to use him fairly "square" to retain him, as he could get another post as good to-morrow if he wished.

For the labourer in nurseries who knows his work there are as good prospects. A friend of mine, a nurseryman and landscape contractor, who has more work than he can manage, is handicapped by a staff consisting chiefly of Poles, many of whom cannot speak a word of English, and coloured men, none of them having even an elementary knowledge of nursery work. These men receive 5s. and 6s. per day, and there are not enough of them.

When these figures are compared with the wages at home, America shows, I think, to advantage. A man with a family would find house-rent and provisions a little more expensive than in England, but not in proportion to the increase in his income. The climate is healthy and enjoyable, and the country beautiful. The servility too often expected at home is unknown here, and life all round is more free and pleasant. Any able-bodied man who can control his taste for drink, and who gives the whiskey a wide berth, can, if he

wishes, either make a home here in comfort, or return home in a few years, the better in wisdom and pocket by the change. To any such, desiring to try their luck, I shall be pleased to give any details or assistance in my power. A. Harding, Villa Nova, Pennsylvania, U.S.A.

FRUIT-DRYING.

MR. UDALÉ has, as our readers know, been conducting experiments on the evaporation of fruits, &c., for the Worcestershire County Council. He has made these experiments the subject of a detailed report, which we commend to the notice of our readers. In the meantime we may quote the summary given by Mr. Udalé:—

1. Ripe fruit dries more quickly than unripe fruit, the latter being several hours longer in the process, and therefore more costly to produce.

2. Unripe fruit loses a larger percentage in weight during the drying process, and is not a good colour for its kind or variety when dried.

3. Large fruit of the respective kind or variety produces the finest dried article of the same variety or kind.

4. Small specimens of the same variety of fruit or vegetables dry more quickly than larger specimens.

5. Stone fruit, such as Plums, Cherries, &c., should be exposed to a low temperature at first for several hours, and have the temperature gradually increased as evaporation proceeds.

6. Apples and vegetables may be exposed at once to a moderately high temperature, and finished in a lower temperature.

7. Stone fruit should be placed on the trays with the stalk ends uppermost.

8. Fruit of equal size should be placed upon the same tray, and not small mixed with large fruit.

9. Apples and Pears should be immersed in a weak solution of salt and water immediately after peeling, 1 ounce of salt to 3 quarts of water; if left exposed to the air after being peeled, they quickly go discoloured.

GENERAL REMARKS.

I think there is a prospect of Plum-drying becoming an industry in this country; and that in years of great abundance of fruit and of very low, or no prices, the fruit may be dried and sold wholesale at remunerative prices. Clearly we have varieties which are at once prolific and suitable for drying; notably Monarch, Czar, Prince Englebert, White Perdrigon and Victoria.

I think it is tolerably safe to say that each of the varieties mentioned is worth, for drying purposes, from 3s. per bushel upwards.

The operation of preparing and drying fruit and vegetables is soon learnt by any intelligent man or woman; and I think it is labour well adapted for women.

If 5s. and upwards can be obtained per cwt. for good Apples, I think it will be best to sell them in the undried state. Perhaps small Apples will pay for drying; and they might also be remunerative for making into jelly.

Although we have made jelly from the peelings and corings of Apples and Pears—that "nothing be wasted"—I fear that the balance would be on the wrong side the ledger if a strict debtor and creditor account had been kept.

We have demonstrated that all kinds of vegetables may be dried successfully—from pot herbs to Cauliflowers, but we have not tested them sufficiently extensively to be able to say if or how far they could be dried with commercial success.

I have tested the eating qualities of the second grade Victoria Plums (I thought if the second grade were good, the first grade would be better) after gentle stewing for thirty minutes, with the addition of a little lump sugar, and I was more than satisfied with their quality. They were clean and delicious, and superior to any French Plums I have bought at any time at 6d. per lb. retail. I selected the Victoria for the test because it has been condemned as unsuitable for drying by a certain writer in the horticultural Press, and because I know the better varieties can take care of themselves.

Although it may be admitted that—so far as our experiments have gone—the best varieties for drying at home are Monarch, Prince Englebert, and Czar, and that they now realise remunerative prices when sold undried, we cannot be certain that they will be so remunerative five years hence, or even three years hence.

Monarch and Czar are being extensively planted, and we may have such abundant supplies of these—and of others as good—in the near future, that the prices realised for them may fall to a comparatively unremunerative amount in the fresh state; then the grower may dry them, and profit thereby.

Samples of French and Californian dried Plums have been bought at 10d. and 6d. per lb. respectively, for comparison with the home-grown and home-dried Plums, and the following are the results:—

Competent judges are agreed that in appearance—

| | |
|----------------------------------|-----------------------|
| The Monarch surpasses the French | at 10d. per lb. |
| Prince Englebert | " " " " 6d. " |
| Victoria | " " " " " " |
| White Perdrigon | " Californian " 6d. " |
| Czar | " " " " " " |

and that their quality in order of merit when stewed gently for thirty minutes is as follows:—

(1) White Perdrigon; (2) Victoria; (3) French, at 10d. per lb.; (4) Californian, at 6d. per lb.; (5) French, at 6d. per lb.; (6) Pershore.

The tenderness of the skins before stewing varied in the following order:—(1) French at 10d.; (2) Victoria; (3) Pershore; (4) White Perdrigon; (5) Californian and French at 6d.

Two Silver Medals and a Bronze Medal have been awarded to the samples of dried fruit and vegetables by the Royal Horticultural Society, Birmingham and Midland Counties' Chrysanthemum, Fruit, and Floral Society, and the Tamworth Chrysanthemum and Fruit Society. James Udalé."

ON PRUNING.

SOME time ago considerable discussion was evoked on the question whether, after a certain stage, it was productive of any practical or fruitful results to prune fruit trees. If I recollect aright, I believe it was mutually understood that at the start the trees were all prepared for the purposes they were intended for, either as standards, bushes, espaliers, or pyramids, and as discussion was confined principally to the staple fruits for the million, viz., Apples, Pears, and Plums, these three I shall only now deal with. I do not propose here to go into the culture, management, and training of each form of tree, but rather to speak on the principles of pruning generally in relation to all forms, with its ultimate results on the tree, whether for the production of fruit or otherwise.

Working from the above data, it is a well-known fact that earlier crops will be obtained from unpruned trees after a certain stage of their growth, but it may be at the sacrifice of a well-balanced crown, through the neglect of pruning. As the matter stands, it will be the

FIG. 7.—*PTYCHOSPERMA ELEGANS* (SEAFORTHIA). (SEE P. 18.)

aim of the gardener to pursue a middle course, i.e., not to prune unduly hard in the attempt to check exuberance of growth while the roots are neglected, as this will only intensify the evil and arrest the fruit bearing capacity of

the tree, and cause numerous shoots to be formed. Many writers on pruning overlook this fact. The two operations of root-pruning, or lifting and branch-pruning, should not be carried out the same season, as this would

tend to lower the vigour of the tree and its growth, which is as much to be deprecated as a too great exuberance, but the growth of each should be reciprocal. Another point I should like to refer to is, that when the old

soil is taken out in order to sever the roots all round the ball of the tree, new soil should take its place; and there is nothing better than good turfy loam, which should be well worked in among, and made firm amongst the roots.

The head of the tree will require scarcely any attention for some time, except to remove spindly growths and crossing branches, shortening very long branches to a reasonable length, and keeping the head of the tree open, so that sunlight can enter. The above remarks apply especially to standards. Espalier and pyramid Apples and Pears, through being mostly grafted or budded on the Paradise and Quince stocks, have a tendency to remain dwarf, and fruit earlier than the former without much pruning. The occasional lifting the trees, and summer-pinchings, comprise most of the pruning required, and these processes will, with good manurial surface-dressings in the spring and autumn over the roots, keep the trees in a high state of fertility for a number of years. Trees of this kind are very suitable for planting in gardens. After a time, long fruit spurs will require removal, and the shoots in the middle of the head should be thinned out, the best and safest time to prune being either after the fall of the leaf or just before the sap rises.

Some years ago when I visited Byrkley Lodge Gardens, near Burton-on-Trent, there was a useful object lesson there in two rows of splendid pyramid Apples on the Crab-stock, which carried enormous crops of fruit. Mr. Hamilton, the head gardener, assured me that these trees had never been touched with a knife since he planted them, except that they were systematically root-pruned when this was required. I cannot say much for the shapeliness of the trees at the time of my visit, which careful pruning at an early date would have secured; but they were certainly marvels of fertility, and this, it seems to me, to be more the object striven for than anything else. J. D. G.

NOVELTIES OF 1901.

(Continued from p. 4.)

NURSERYMEN.—Messrs. James Veitch & Sons have been constant exhibitors at the Royal Horticultural Society, and during the past year have secured a large share of the awards. Four of their best new Orchids are *Laelio-Cattleya* × *Digbyano-Mendeli*, Veitch's var., of an uniform bright rose-pink tint, and with a wonderfully-fringed lip; *L.-C.* × *Semiramis superba*, the largest and best of the winter-flowering *L. Perrini* crosses; *Cattleya* × *Browniæ* Veitch's variety, a very remarkable and beautiful hybrid; and *Laelio-Cattleya* × *Ilione*, the largest, best, and brightest in colour of the hybrids, bearing a general resemblance to *Cattleya* × *Mantini*. Other fine things of Messrs. James Veitch & Sons' of the year were *Phaio-Calanthe* × *Schroderiana*, *Laelio-Cattleya* × *Yacuna*, *L.-C.* × *Robin Measures* var. *Ena*, *L.-C.* × *Cybele*, *L.-C.* × *Ophir*, *Cattleya* × *Bactia*, *Epidendrum* × *Clarissa superbum*, and *Masdevallia* × *Alceste*.

Messrs. F. Sander & Co., of St. Albans and Bruges, have evolved many fine novelties during the year, the greater part of which have passed out of their hands before they could be recorded to their credit. *Odontoglossums*, always a great specialty of theirs, have in their hands produced some fine forms during the year, among which are two clear yellow *Odontoglossum crispum*—*O. c. citrinum* and *O. c. Sunshine*; and *O. c. King Edward VII.*, *O. c. King-Emperor*, *O. c. album*,

and *O. c. majesticum* have bloomed with them. Also *O. Pescatorei* Emperor and *O. P. Empress*; and among the hybrids *O. × Adriane nobiliss*, *O. × A. memoria Victoria Regina*, *O. × A. Canary Bird*, *O. Rolfæ pulcherrimum*, *O. × R. Mrs. R. H. Measures*, *O. Harryano-crispum* "Duchess of York," *Miltonia* × *Bleuana* "Queen Margherita," *Cattleya Reineckiana*, *C. Mendeli Queen Alexandra*, *C. Kitty Lloyd* (velutina × *Rex*), and a large number of hybrid *Cypripediums*, in many of which the effect of secondary crossing is seen.

Messrs. Charlesworth & Co., of Heaton Bradford, have reaped the reward of skill and diligence in the number of new and fine hybrids they have flowered during the year. One of their most satisfactory crosses was *Cypripedium* × *Maudie* and its varieties, resulting from crossing *C. Lawrenceanum* *Hye-anum* and *C. callosum* *Sanderæ*. *Sophræ-Laelia*

Gratrixiæ and *Sophræ-Cattleya* × *Nydia* are finely coloured flowers; *Cattleya* × *germania*, *C. × Iris* and its variety *aureo-marginata*, *C. × fulvescens*, *C. × Lottie*, *Laelio-Cattleya luminosa*, *L.-C. × Ivernia*, and *L.-C. × Haroldiana* Charlesworthi are all very fine things of which the raiser may well be proud. Also at Messrs. Charlesworth's many pretty hybrids of more moderate pretensions, but interesting withal, have flowered for the first time during the year.

Messrs. T. Rochford & Sons' best were the white *Cattleya* *Hardyana*, Rochford's variety; the large and handsome *Odontoglossum* × *loochristyense* Rochfordianum, *O. crispum* *Edward VII.*, and *O. × Wilekeanum*, Turnford Hall variety.

Messrs. Stanley, Ashton & Co., Southgate, flowered two specially fine albinos—*Cattleya Luddemanniana* Stanleyi and *C. Mossiæ* "Mrs. F. W. Ashton"; and their large importations of *Odontoglossum crispum* have produced promising spotted forms, of which the best shown was *O. c.* "Abner Hassel."

Messrs. Hugh Low & Co. flowered *Cypripedium* × *Kimballianum*, "Low's variety"; *C. Mendeli* Mrs. R. Tunstill, *C. M. His Majesty*; *C. Mossiæ* Sir Alfred Milner, and some good *Odontoglossums*.

Mr. Ed. Kromer had the largest and finest coloured *Laelia Jongheana* in his var. *Kromeri*. And all the other growers have in some degree produced desirable novelties.

CONTINENTAL NOVELTIES.

M. Linden, in his famous collection of *Odontoglossums* at Moortbeek, has bloomed during the year a great number of fine things, some of which have been figured in *Lindenia*, and duly noted in the *Gardeners' Chronicle*. Their *Odontoglossum crispum* "Quo Vadis," figured March, 1901, is a gorgeously-coloured form, a thing of beauty to dream about; *O. c. auriferum*, a yellow-blotched form of the *O. c. xanthotes* class; and some of the varieties of *O. × Adriane*, very large and showily blotched. Among the *Cypripediums*, *C. × Glonerianum*, *C. × Bruxellense*, *C. exul aurantiacum*, *C. insigne* *Chantini* *Lindenii*, and *C. × Lansbergiæ*, are all showy novelties. Several very handsome new hybrid *Cattleyas* and *Lælias* have also been flowered by Messrs. Linden, and their Bornean type of *Phalenopsis* named *Rimestadiana* has proved good, many of the flowers being distinctly tinted with purple. Out of other importations the fine *Oncidium varicosum* *Lindei* and *O. v. Moortbeekense*, both bearing rich chestnut red marks on their large golden-yellow labellums, have flowered.

M. Florent Claes at the last Temple Show exhibited several fine *Odontoglossums*; and Mr. A. A. Peeters, of Brussels, some interesting hybrids, &c.

The following Orchids among others have been illustrated in the *Gardeners' Chronicle* in 1901:—

- Arachnanthe Cathcarti*, March 9, p. 159.
- Cattleya* Miss Harris var. *E. Ashworth*, supplement, May 11.
- Coryanthes Mastersiana*, Jan. 12, p. 19.
- Cymbidium Lowie-eburneum*, July 13, p. 25.
- Cynorchis purpurascens*, Feb. 9, p. 87.
- Cypripedium Maudie magnificum*, Aug. 17, p. 129.
- Cypripedium* T. W. Bond, Coundon Court var., Feb. 23, p. 127.
- Dendrobium Ashworthiæ*, Feb. 9, p. 86.
- Epidendrum Claesianum*, Feb. 2, p. 70.
- Laelia* Mrs. Gratrix var., supplement, Jan. 5.
- Laelio Cattleya Digbyano-Mendeli*, Veitch's var., Sept. 14, p. 207.
- Liparis tricallosa*, April 6, p. 223.
- Moorea irrorata*, April 20, p. 248.
- Phaius Warpuri* (tuberculosus), February 2, p. 77.
- Odontoglossum crispum* Annie, January 8, p. 365.
- Odontoglossum crispum purpurascens*, Apr. 13, p. 233.
- Odontoglossum crispum* Rossendale, Apr. 20, p. 249.
- Odontoglossum* Crawshayanum, July 27, p. 77.
- Odontoglossum* × *Ruckerianum* Mrs. R. B. White, May 4, p. 279.
- Odontoglossum maculatum* Thompsonianum, July 27, p. 77.
- Odontoglossum crispum* Pittianum, Aug. 24, p. 149.
- Sobralia Ruckeri*, July 27, p. 67.

(To be continued.)

THE SHORT APPLE-CROP OF 1901.

A RECENT issue of the *American Agriculturist* states that their earlier reports pointing to the shortest Apple-crop for years have been fully confirmed. October sunshine did something to develop the fruit where there was any chance for it, but in the main the crop was a disappointing one. The only exception is found in the important Apple sections of the south-west, including Missouri, Kansas and Arkansas, where the yield is proving very much better than at one time seemed possible, and buyers from all parts of the country are clamouring for sound fruit; and exceptionally high prices rule. In what has long been considered the commercial Apple belt, phenomenally light yields were the rule.

The surprising thing, as noted, is the development of the Apple crop in the south-west, many counties reporting the largest yield for years past, and of fine quality. As a result, eastern buyers are making heavy drafts upon south-western Apple orchards, paying farmers big prices. As is often the case in seasons of practical Apple failure, the quality of the fruit in the older, middle, and eastern States, is on the average poor. There are some exceptions, but, as a rule, much of the fruit is wormy, coarse, or lacking in flavour.

In practically every instance where there is any fruit available for the markets, growers are getting the highest prices they have done for years. This will in a degree offset the shortened rate of yield, except in sections where the crop is a practical failure. High prices at the same time induce growers and dealers to utilise every barrel possible, and this means the foisting upon the market of much inferior fruit, resulting in a wide range of prices.

The commercial Apple crop of the United States approximates 23,000,000 barrels, against

more than double that amount last year, being, in fact, the smallest output for many years past.

In the Canadian provinces the Apple-crop is extremely uneven. In the Apple section of Ontario the crop is probably the worst failure ever known. At the same time the quality of Ontario Apples is said to be good, but not brilliant, the leading varieties being Spy, Baldwin, and Russet. In Quebec a moderate yield has been secured, while Nova Scotia has a good, but not a full crop. Reports from the Annapolis Valley state the average yield of Apples to be 70 per cent. of a full crop. The quality is among the best for years past, far ahead of 1901, and growers are receiving splendid prices, ranging from 10s. 6d. to 12s. 6d. per barrel.

London dealers say the crop of winter varieties of Apples, both in England and on the continent, is better than was at one time anticipated, but that there will be a demand at good prices for Canadian and American fruit, provided quality and packing are right. It is also stated that markets are favouring highly-coloured Apples. *J. J. W.*

THE HUMUS OF SOILS.

A GARDEN soil must contain in addition to the necessary mineral constituents of plants, a suitable supply of available nitrogen, or the plants cannot make the necessary growth requisite for full development of flowers and fruit. It has been found by analysis that one part of nitrogen in a soil will correspond to about 10 or 12 parts of humus. Any increase or decrease of the nitrogen in soils is followed by a corresponding increase or decrease of humus. The loss of humus and organic matter from a soil not only reduces the stock of nitrogen, but also reduces the amount of available mineral-food as well. The decaying animal and vegetable matters present in all good soils produce acids which act upon the inert and inactive plant-food elements and render them available. The humates or organic products which are formed by the union of the organic acid products derived from the decay of the humus, combined with the mineral matter of a soil, form valuable plant food.

Experiments have shown that humate of lime is capable of being assimilated and utilised by plants. Potash, phosphoric acid, and all of the mineral elements of plant-food when combined with humus and nitrogen, constitute valuable forms of food for all kinds of garden crops.

The high fertility of old kitchen garden soils is due to the large store of humus. The loss of humus changes the physical properties of a soil, both as to colour, weight per cubic foot, and retention of soil-water. A loss of humus and vegetable-matter causes a lightness in soil-colour, an increase in density and compactness, with a less capability to retain moisture. A dark-coloured soil becomes hotter in the sun's rays than a light coloured one; but at night all soils will cool to the same point.

Humus conserves the moisture of a soil, while a rotation of crops, the use of stable-manure, and the digging-in of vegetable refuse conserves the humus. If the soil contains too much humus the vegetative system of plants becomes overfed by an excessive quantity of nitrogen, luxuriance of foliage and stem-growth is encouraged, while flowers and fruit development are retarded. In general it may be said, that an abundant supply of potash and phosphoric acid, especially the latter, tends to increase fruitfulness, hardiness, and firmness of leaves and stems; while an abundance of

nitrogen and humus has a tendency to produce just the reverse conditions. While the plant cannot be at its best without a suitable supply of nitrogen and humus, plants which are grown chiefly for their fruits may easily be injured by an amount only slightly exceeding a sufficiency.

It has been found that the store of plant-food in a soil is of little value unless the physical conditions and the available moisture which it contains are also considered. This brings into prominence the question of proper tillage. No matter how fully the soil may be supplied with plant-food, if it does not furnish a comfortable home for the plant, or if for considerable periods there is not enough moisture present to convey the plant-food to the roots, little benefit may be expected from the real or potential nourishment existing in the ground. Plants growing in a garden suffer oftener from a lack of moisture than they do from lack of soluble food. *J. J. Willis, Harpenden.*

A HALL FOR THE ROYAL HORTICULTURAL SOCIETY.

THE present time may not be that quite the most appropriate for the favourable consideration of a "Hall for Horticulture" in London, but we must be careful not to allow the project to slip out of our memory altogether. Judging as a mere outside Fellow of the Society, however, I should say that despite many and varied disadvantages, the Royal Horticultural Society itself was in times past rarely, if ever, in a better position financially than it is to-day. When we hear of depression in some other crafts and callings, it is very refreshing to read of nearly 900 new Fellows of the Society having been elected within the past twelve months. As a matter of fact, none of us, however old and experienced in matters horticultural, can remember a time of greater popularity and enthusiasm for gardens and gardening, and for gardening literature than that which exists in our own time. Palmy days the Royal Horticultural Society has seen, the hey-day of Chiswick and its exhibitions, its breakfasts, and *fêtes* of various kinds, but those sunny days were the result of aristocratic ascendancy and patronage, the days when Dr. John Lindley, autocrat that he was, used to drag on the gardeners, and tell them to go and get shaved, or to have their boots cleaned ere they allowed the wind to blow between themselves and the nobility! Now-a-days all this is altered, and whilst there is all due respect paid to the comparatively few nobly-born patrons of horticulture, the same is also true of the democracy of gardens and gardening, the working gardeners, and of those who deal in plants and seeds, or in gardening materials.

The Royal Horticultural Society to-day has H.M. the King as its patron, and consists of "all sorts and conditions of men."

We are at the beginning of a year fraught with many auguries for the general good and welfare of England, the year of their Gracious Majesties' Coronation, a year when memorials and all sorts of monuments will be erected in commemoration of a most remarkable epoch in our national history, progress, and welfare. Now comes the question: What will horticulturists do to mark for ever the crowning of England's King and Queen? One of the long-felt, and of late, one of the most keenly felt wants of the many horticultural supporters of the Royal Horticultural Society has been that for a meeting-place and hall of horticulture in London, in place of the conveniently

situated, but small and often overcrowded Drill Hall now rented at Westminster. The money to buy, to select the site, and to build the hall in a convenient place or position, will take time to collect, select, and carry through, of course, and in these matters "hasten slowly" is a good motto; but cannot we take advantage of a great national pageant and of patriotic rejoicing, and at least start a fund for a Royal Hall of Horticulture in 1902, the year of the Royal Coronation?

It is, in one way perhaps, unfortunate that horticulture so far has not found its Carnegies, its Lord Iveaghs, or its Yates Thompsons in London; but if it is denied the advantages of wealthy patrons who are generous also, it at least has an enormous following of amateur and professional gardeners who are willing, and many of them only waiting for an opportunity to aid and assist the Royal Horticultural Society in this question of a hall and meeting-place of its own.

The Society is unendowed, even a Government grant has so far been denied; but now that alterations are in the air, it might be well to approach the proper authorities and obtain from them, if possible, a suitable and central site for the long proposed hall. Surely a good position might be spared for such a building, either in St. James' or in the Green Park alongside Piccadilly. If the project of demolishing some of the houses in Spring Gardens be carried out, so as to open up a broad avenue from Trafalgar Square to Buckingham Palace, might not a Royal Hall of Horticulture find a fitting place thereon? Seeing that the so-called Royal Botanic Society has long enjoyed the grant of a site in Regent's Park, how comes it to pass that our Royal Society of Horticulture is left unprovided for in a similar way? Between the work and usefulness of these two societies, from a national point of view, there is no comparison whatever, and why the least important and less useful of the two is favoured, to the exclusion of the other, seems past all reasonable understanding. Some equitable amalgamation of the Royal Horticultural Society with the Royal Botanical Society has often been suggested, but there are financial and other reasons likely to prevent such a union.

Lord Rosebery suggested in a speech the other day that business men were much to be desired in Parliament nowadays, and if we gardeners could get a few good men of business to take up this important question of a Royal Hall for Horticulture, I believe their efforts could be brought to be successful, and I feel sure that gardeners everywhere throughout the country would influence their employers, as well as otherwise do the best they could, for this project themselves. We shall be told, no doubt, that there is "a lion in the way," but how often do we find, in reality, that it is not the lion that is in the way, but a mere fear of failure, that prevents united action and consequent success. *F. W. Burbidge.*

METROPOLITAN PUBLIC GARDENS' ASSOCIATION.—At the last monthly meeting of this body, it was stated that the receipts during 1901 amounted to about £3,300, showing a decrease of about £1,200 as compared with the preceding year, which was stated to be greatly attributable to the adverse effects of the war and its allied causes in having deprived the Association of certain especially generous supporters, and in having diverted or lessened the flow of general contributions. The work done by the Association is surely sufficient advertisement of its value.

The Week's Work.

THE ORCHID HOUSES.

By W. H. BOUND, Gardener to J. COLMAN, Esq., Gatton Park, Reigate.

The Cattleya-house.—Our plants of *Cattleya labiata autumnalis* have now passed out of flower, and will be afforded just sufficient water to keep the pseudo-bulbs in a plump condition. *Laelia pumila* and its varieties may be similarly treated for the time being. Plants bought in of recent importations of this species should be potted in a compost consisting of peat two-thirds, and sphagnum-moss one-third, the latter being chopped up finely, and the whole being well mixed together before use. Imported plants with all their leaves retained on them should be hung up in a cool house, so as to induce a start in growth, afterwards shifting them to the intermediate-house. During the time they are in the *Odontoglossum-house* they will require little or no water, an occasional syringing on bright days being all that they require.

Cleansing the Plants.—This kind of work should be completed before the end of the month, and doing this affords the opportunity to cleanse the roof, glass-ends, partitions, and front lights of the various houses, also the stages—very necessary operations in districts within a few miles of big towns. It is a most important matter during the winter to afford the plants the utmost amount of light, and only perfect cleanliness will secure this. The leaves of every plant should be sponged at the least once a month, whether there are insects upon them or not, this being a matter of great importance to the well being of Orchids, or of other plants.

Insects.—At one time thrips were the worst of pests in Orchid-houses, but thanks to Richards' XL-All vapour used once a fortnight, and not of great strength except in very bad cases, the plants can be kept quite free of these insects. This substance should be employed, whether thrips are noticed or not. Scale insects, especially the small white one that frequently infests *Laelias* and *Cattleyas*, are still a great plague to cultivators, and difficult to eradicate; and we more often than not spread scale insects about among the plants by removing them with a small stick or dry hard brush. At a certain stage of development, they conceal myriads of eggs and young under their minute shelly covering, which when disturbed alight on plants all over a house; so that it often occurs that after the cleansing of the plants is finished, as we fondly suppose, we have but spread about the insects that were infesting one plant over a dozen. My practice is to touch the scale insects with methylated spirits, and then rub them off with a brush dipped in the spirit, and even then the workman should take the infested plant into a shed whilst cleansing it. Red-spider sometimes gives trouble in the winter season, especially infesting *Cymbidiums*. As a means of ridding a plant of this acarus, I sponge the plants with a preparation of petroleum, soft-soap, and flowers-of-sulphur, which is a very effectual one. Mealy-bug, although one of the worst of pests, can be easily eradicated if carefully watched, and when found touching them with methylated spirits. It is when allowed to breed and harbour on plants unchecked that it is so difficult to destroy. The only advisable method is then to examine the plants at weekly intervals, employing the remedy above given.

PLANTS UNDER GLASS.

By J. C. TAILLACK, Gardener to E. MILLER MUNDY, Esq., Shipley Hall, Derby.

Anthuriums.—Species of the *Scherzerianum* type are now beginning to grow and throw up their earliest spathes, and this is the most suitable season for repotting or dividing any of the plants, as the plants are not then subjected to any great fluctuations of temperature from sun-heat, of which they are very impatient at all times, but never so much so as

they are just after being potted. Sourness of the soil renders the plants inactive, and to obviate this, all, or nearly all, the old soil should be carefully removed, even to the extent of baring the portions of the stem or root-stalk which have been buried. The new soil should be lumpy, and freed from some of its finer particles, but not to the extent of leaving nothing but fibre. A suitable compost consists of good loam, peat, charcoal, and silver-sand; and I would insist on the use of a rather large proportion of loam. Peat is usually looked on as the staple soil, and in it the roots run freely, but the roots made in peat are of quite a different nature to those made in good loam, and not nearly so effective in the production of spathes and leaves. Ample drainage should be provided, and the crowns elevated well above the rims of pots or pans. Strict attention to this, and to afford water on the surface, will certainly help to keep the soil sweet for a long period of time. Plants which stand in no need of repotting may be afforded weak liquid-manure once or twice a week to the surface of the soil. A fair amount of humidity in the air of the house, and a temperature of 58° Fahr. at night, with a rise of 10° by day, should be afforded. These figures are lower than those generally advised, but have been proved as much more suitable than higher ones.

Climbers.—Many climbers both in stoves and greenhouses may be pruned at about this date. In the case of *Allamandas* and *Clerodendrons*, only those intended for flowering early should be dealt with; and the same may be said of *Bougainvilleas* in the intermediate-house. But in the greenhouse, *Plumbagos*, *Heliotropes*, *Tecomas*, *Swainsonias*, *Jasminums*, and various *Clematis* may be pruned forthwith, as they will not start too soon in the temperature maintained in the cool greenhouse. For the present, all the plants mentioned should be kept rather dry at the roots, as they will have sufficient stored sap to cause the buds to start, and much water applied to the soil might do harm to the roots.

Chrysanthemums.—The cuttings should be frequently inspected, and any that appear to be rooted should be removed to a pit, &c., where air may be afforded; this being necessary from the fact that some varieties take a longer time in forming roots than do others, and to treat all alike is a mistake. Again, cuttings are not available or suitable for propagation all at one time, and the removal of some shoots makes room for others. Of late years, the propagation in the spring of many varieties suitable for producing one large flower on a plant has been found advisable. The old plants intended for producing suitable shoots should have extra attention, so that the shoots may be sturdy and strong when wanted.

Conservatory.—In this building there will be a dearth of tall flowering plants at the present time, and the display of flowers will be mostly furnished by the various bulbs which have been forced. These should be frequently changed, and the house kept thoroughly clean, so that there may be always a general appearance of freshness and tidiness to make up for lack of variety.

Tuberose.—A batch of African Tuberose for early flowering should now be started, plunging the pots in a bottom-heat of 70° to 75°. No water should be applied until growth starts, as the plunging material will provide sufficient moisture for the unrooted bulbs. Each bulb should be covered with an inverted pot.

FRUITS UNDER GLASS.

By JAMES WHYTECK, Gardener to the DUKE OF BUCKLEUCH, Dalkeith.

Peaches and Nectarines that have been forced early for several years, and were started this season in November, will now be in full flower. At this stage a constant circulation of air is needed, and sufficient heat in the pipes to maintain a night temperature of 50° when the

weather is very cold, and 55° when milder; during the day the temperature may be 10° higher. As the pollen ripens, shake the trellis each day, and if upon any variety the pollen is scarce, convey some from others with a camel's-hair brush. When fruit is set, do not admit air constantly, but increase the night temperature to 60°. Do not syringe the trees until the fruits are the size of large Peas, but damp the house frequently according to the weather outside. Secure a change of air in the house daily. Disbudding of the trees must be attended to as soon as the fruit is set, removing at first those on the front side of the shoot and those on the opposite or back side of the shoot, leaving those right and left and the leading bud; any buds that show a tendency to grow stronger than the others should be removed. A little later the disbudding may be continued until no more shoots are left than will be necessary for furnishing the trees with fruiting-wood for next year, namely, one at the base of each growth, one half way upon upside of branch, and the leading growth; any buds with fruit at the base, and otherwise would be removed, should only be pinched, leaving three leaves. Guard against having young growths at the extremities of the trees, and little or none in the centres. When the fruit is set, afford the inside border a watering with warm water, and before doing this sprinkle some of Thomson's Vine-manure, or other artificial manure, over it.

A Succession-house to the earliest Peach-house should have been closed at the beginning of this month. It should contain such varieties as *Peaches*, *Amsden June*, *Hale's Early*, *Stirling Castle*, and *Violette Hâtive*; *Nectarines*, *Cardinal*, *Précoce de Crooneels*, *Early Rivers*, and *Lord Napier*. A temperature of 45° to 50° at night will be sufficient until the flower-buds open, then 50° to 55°, with constant air, as advised for earliest house. Daily syringing and damping must be done, but avoid keeping the trees constantly wet in dull weather. In localities where the soil is heavy and suited for Peach-trees, the border need only be examined to give water enough at starting, but in cases of light soil the surface of the border should be removed down to the roots, and a good dressing of artificial manure afforded; also a top dressing of 2 inches of fresh soil, and a coating of farm-manure over all. All trees in other succession and late Peach-houses may now be pruned, and both trees and houses thoroughly washed with soap and warm water. Fir-tree oil is one of the best and safest remedies against scale. If the back wall of the house be smooth enough, oil-paint it, otherwise lime-wash it, but if this work be put off much later the buds will be too forward, and suffer injury. It is necessary, more often than is practised, to lift Peach-trees to check strong growth, and now and again a tree has to be brought in from outside. The autumn is the best season to do all such work, but it is not yet too late. Plant on the surface of border; the roots will get down soon enough. It is not too late to renew or improve late Peach-borders.

Early Muscat Vinery.—It is of little use to start Muscats before the beginning of the year, because the higher temperature required for setting them needs the co-operation of the lengthening day and sunshine. Muscat of Alexandria when in flower require to set them properly a night temperature of 73° to 75°, and in the day as near to 90° as possible, with abundant moisture. For early Muscat we grow here *Sprothoro Muscat*; it suits early forcing because it sets freely should the night temperature go down to 65°. The bunch is broad and dumpy, berries large, and of good Muscat flavour. It requires the same length of time to ripen as other Muscats. Started thus early, Muscats are better for having the roots chiefly inside; the same preparations being made with house and border as those previously advised. The night temperature at starting for Muscats is 55° to 60°, 10° to 15° higher in day. Syringe and damp down according to the weather. Vineries from which the fruit is cut should be pruned to two buds. Vines

with long spurs should have fresh rods brought away from the base of the old rods, as finer fruit is produced on these young rods. Cleanse the house and Vines, prepare the border, and make all ready for starting. Vineries with late Grapes hanging in them should be kept cool and dry, and falling foliage removed every morning.

THE KITCHEN GARDEN.

By T. TURTON, Gr. to J. K. D. WINGFIELD DIGNY, Esq., Sherborne Castle, Dorset.

Hot-beds.—With lengthening days and more sun-heat, a milder heat in the various hot-beds of which use is made will be of advantage in the forcing of all kinds of early crops, including salading. Where tree-leaves are plentiful, a bed should be made sufficiently wide to take two or more rows of frames, according to the demand, for such vegetables as Asparagus, Carrots, Turnips, Radishes, Lettuces, and Potatoes. Such a bed has already been made in these gardens. Apart from being an ideal system for obtaining the above forced vegetables, &c., it is a great saving of labour, compared with the practice of mixing tree-leaves and dung together, which is necessary for the earlier forcing of Asparagus, &c. The outside of the bed is formed with the longest straw from the stables, the short going to the heap for potting, and is from 2 feet to 3 feet thick. All the best of the tree-leaves as they are cleared up in the pleasure-grounds are simply deposited there, and kept well and evenly trodden; one end of the bed is kept open for the carts until it is nearly completed. Such a bed lasts two years, being suitable for frame Cucumbers during the summer, and Lettuces, Endive, &c., in the autumn and winter, followed by Vegetable-Marrows the following season. It is therefore necessary to divide the ground set apart for such hot-beds into two parts, making up one-half of it fresh every year. The leaves from the two-year-old bed make excellent leaf-mould, useful in the kitchen garden where the soil is stiff and retentive, and always acceptable in other parts of a garden.

French or Kidney Beans.—Make further sowings of these as required for succession, using 7-inch pots, which will be large enough for the present. Let the pots be filled to about half their depth with turfy loam three parts, and one part spent Mushroom-bed dung, with a good proportion of charred garden-refuse for ensuring porosity. Three or four large crocks, covered with the rough portion of the old Mushroom-bed dung, will afford ample drainage for each pot. Sow eight or nine Beans in a pot, and thin to five or six in a pot, when it can be seen which are the best plants. The soil should be sufficiently moist as not to require water until the seeds have germinated, and the leaves got free of the soil. Do not cover the seeds more than $1\frac{1}{2}$ to 2 inches, and leave space for a top-dressing, which should be applied when the plants are thinned and supported. Place the pots quite near to the glass in a sunny part of a forcing-house having a temperature ranging from 60° to 70°. French Beans should never be put into vineries, it being an impossibility to keep them free from red-spider. Plants with pods set should be afforded gentle syringings on fine days, in order to keep this pest in check. The plants would also be much benefited at this stage by having clear liquid-manure applied twice a week; that from fowls'-dung, which is easily made by putting about 1 bushel of the dung into a coarse canvas bag, and suspending this in a butt of water, renewing the dung as it gets exhausted of nutriment, and filling up the water-butt. Failing this, a good sprinkling of Clay's, or any of the many artificial manures, which are quick in action, will act as a timely fillip.

Early Peas.—If the border for these is not already prepared as advised above, let no time be lost before preparing it, as after the middle of the present month (January) no opportunity should be missed for sowing the seed if the ground is dryish and friable. Shallow drills

should be taken out with a spade, and if the soil will admit of being trodden, the drills should be lightly and evenly trodden to the proper depth; but if at all wet, then a board about 7 inches wide should be used to press the soil, which prevents the Peas sinking deeply as the ground settles. Of late years the more enterprising seedsmen have so improved upon our early kinds of Peas, that in the private garden at least it is no longer necessary to sow the round, white-seeded, flavourless varieties for early use. William the First is quite as hardy as any of the early round white-seeded Peas, and from long experience with it I have found it to be equally early, and being a green Marrowfat Pea, it is much superior in flavour, and may be depended upon (provided a true stock of it is obtained) for the supply until Exonian and the newer varieties of early Marrowfat Peas sown two or three weeks later come into use.

General Work.—Inspect the plantations of midwinter Broccolis, and directly the heads have reached a serviceable size lift the plants, and lay them where protection from frost can be given. Take up a sufficient quantity of Jerusalem Artichokes, Parsnips, Salsify, and Carrots, to serve the needs of the establishment for a week or longer. Carrots wintered in the ground should be covered with long litter or other light material, so that the roots may be easily dug up in hard weather. Of Seakale take up a sufficient number of crowns to ensure a continuous supply of heads in the event of hard frost setting in; they may be potted or boxed with leaf-mould among the roots, placed in some frost-free spot, and taken into the Mushroom-house or other dark warm place in batches.

THE FLOWER GARDEN.

By R. DAVIDSON, Gardener to EARL CADOGAN, Culford Hall, Bury St. Edmunds.

Violas.—Plants that were struck from cuttings in the early part of the autumn of last year will have made numerous fibrous roots in the light, sandy compost in which they are planted, and an occasional application of soot-water and weak liquid-manure will be very beneficial. This should by preference be made early in the forenoon of bright days, so that the foliage may get dry before the evening.

Calceolarias and Centaureas.—Cuttings which were inserted in cold frames in the autumn will have wintered favourably this year; and in order to obtain a sturdiness of growth, the frame lights should be removed for several hours in the daytime—and should the weather be very mild, the lights may be tilted about 4 inches at the back throughout the night. Let all decayed leaves be frequently removed, and the surface of the soil stirred. Let the side shoots of Centaurea candidissima be similarly treated. Assuming that the cuttings were inserted in the autumn in 60-pots filled with sandy soil, they will have become established in the cold frames, and may have thorough exposure throughout; of course, excluding frost by means of linings of litter, &c., and coverings on the glass at night.

Pergolas.—Where these structures exist, and the framework consists of wood, the pillars and arch-bars should be well examined at this season, and any part that is too fragile to endure for another year should be replaced by sound materials. The plants covering the pergola, such as Vitis Coignetiae, Wistarias, Cydonias, Viburnums, Roses, summer-flowering Jasmines, should be cleared of dead shoots and spurs, refastening the shoots and branches to the framework, and in so doing affording strong-growing and large-leaved species ample space for the development of the foliage. Forsythias, if these are employed, where they have not already been attended to, will require the same kind of treatment, and the removal of the dead shoots. If insects or their larvae be present upon the plants, prepare a mixture of petroleum

$1\frac{1}{2}$ wine-glassful, black soap 3 oz., rain-water 1 gallon, stirring the ingredients together, and applying it to the infested plants with the garden-engine.

Clematis.—Species and varieties of these that are protected from frost should have the protective material removed in mild weather in order that the leaf-buds may not develop prematurely. It should also be removed from varieties of T. and H. T. Roses, whether of bracken or litter, or the bark may decay. Clumps of herbaceous perennial plants should have the same kind of attention. The ordering of flower seeds from the seedsmen should have immediate attention, having proper regard to locality and climate, and the season at which the chief display is desired, or the uses to which the plants will be put.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bickton, East Budleigh, Devonshire.

The Peach Wall.—Assuming that the trees have been taken from the wall, pruned, and washed with an insecticide, it will be necessary to lime-wash the wall before fastening back the trees; and if nails are used for the purpose, it is best to go over the wall, stopping all holes with cement, before the lime-wash is put on, for it is here a great many injurious insects hide. The wash may be toned down to slate-colour by adding a little lamp-black. The branches should be tied in small bundles so that the brush may be worked more conveniently. It is the practice in some gardens to keep the trees from the wall until the buds are well advanced, but although it may retard the blossoming period a week or ten days, I do not think the method a good one, as there is the greater evil of knocking off many flower-buds when training, no matter whether tied or nailed, and the work can be much more expeditiously carried out while the trees are comparatively dormant.

Training.—A practised eye is required for this work. The fan-shape is the best style of training for the Peach and for all stone fruits, whose branches are liable to die away. The gaps can be thus more easily filled up than by any other mode of training. The main branches should first be fastened in position and evenly distributed on either side from the centre of the tree, the lateral branches running in the same direction, allowing a space of 3 to 4 inches between the shoots, tying or nailing these at their full length, but not too tightly, shortening to the second bud all surplus shoots or any inclined to grow outward to form spurs. In training these two or three years from the graft, the centre should be kept well open and the shoots almost horizontal, or else most of the sap will rush to the upright shoots rather than to those on either side lower down, and an ill-balanced tree will result. If the nail and shred are used in training, it should be placed above and below the shoot alternately, this keeping the branch in position better than if nailed only on one side. All shreds to be used a second time should be boiled, in case any insects or eggs are contained in them. Nails are the better if made red-hot and before quite cold placed in a bag and hustled too and fro to rid them of rust. Newly-planted trees should neither be pruned or trained for the present. It will be more comfortable for the workman, and better for the border, if boards are laid down for standing upon while the work of pruning and washing is carried out.

Gooseberries and Currants.—Cuttings may be made of strong, straight shoots, 12 to 15 inches in length, with all but the four buds at the top removed, and topped about 2 inches. Black Currants should retain the whole of their buds, so that some shoots may arise from the root-stock annually. These cuttings are the better if struck in a somewhat shady position in trenches 4 to 6 inches deep, and having an upright face. Make the soil firm about them. A good distance for cuttings is 8 inches by 1 foot.

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.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JAN. 14.—Royal Hort. Soc.'s Committees.
—Scottish Hort. Assoc. (Ann. Gen. Meeting).
WEDNESDAY, JAN. 15.—Royal Botanic Society meet.
THURSDAY, JAN. 16.—Linnean Society meet.

SALES FOR THE WEEK.

MONDAY, JAN. 13.—Perennials, Border Plants, Roses, &c., by Protheroe & Morris, at 12.—Roses, Bulbs, &c., Johnson, Dy-mond & Son, at noon, Japan Lilies at 1.30.
WEDNESDAY, JAN. 15.—Azaleas, Palms, and Bulbs, by Protheroe & Morris, at 12.15.—Lilies, Plants, &c., at Stevens' Rooms, at 12.30.
FRIDAY, JAN. 17.—Border Plants, &c., Protheroe & Morris, at 12: Orchids, at 12.30.—Collection of Orchids, by Mr. Cowan, Coal Exchange, Manchester, at 12.30.
SATURDAY, JAN. 18.—Palms and Decorative Plants, at Stevens' Rooms.

TENDERS.

Construction of Recreation Grounds, St. John's Wood, &c., Borough of Marylebone.

(For further particulars see Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick —36° 7'.

ACTUAL TEMPERATURES:—

LONDON.—January 8 (6 P.M.): Max. 47°; Min. 43°. January 9.—Dull; mild.

PROVINCES.—January 8 (6 P.M.): Max. 48°, W. Ireland; Min. 43°, N.E. Scotland.

Culture of Orchids in Leaf-mould. THE subject of the culture of Orchids in leaf-mould is one of such interest to Orchid-growers that the following communication which we have received from M. DE LANGHE-VERVAENE will, we are sure, be read by them with interest:—

"It should first be stated that this new method of culture, introduced by us twelve years ago, at first met with but scanty sympathy from horticulturists, and it was only after some time, when we had given decided proofs of the value of our theory, that here and there some grower of Orchids, after visiting our houses followed our example. So simple a plan of cultivating these plants did not seem feasible. Instead of weighing so important a question, it was negatived *a priori* pending fresh developments. Fresh proofs were soon forthcoming, and year after year the results were more convincing; oddly enough, those whose business it was to instruct Orchid-growers still found our method undesirable, and disparaged it with the object of decrying the use of leaf-mould, which was supposed to do every possible harm to Orchids planted in it.

We did not cease to contend that our system of feeding was more natural, and therefore more acceptable than those formerly pursued, but our explanations of the value of the leaves, and the abundance of nutritive properties that they contained, were unheeded.

In 1890 a congress was held in Paris with the object of determining the cause of the degeneration of Orchids grown under glass, and it was clearly demonstrated that diminution of the pseudo-bulbs was attributable to insufficient nourishment. To escape these

consequences, the use of artificial manures was recommended. Soon after this M. L. CHAURÉ, editor of the *Paris Moniteur d'Horticulture*, having heard of our new method of cultivation, visited us at Brussels with the idea of noting the results obtained by us. Furnished with such information as we could give, he recognised the importance of the matter to French Orchid-growers.

It was after this that leaf-mould was made the object of many experiments which, if not satisfactory to everyone, at least converted many who had previously been much averse to its use; and it may be said that it is now largely used in France. It is likely also to be adopted in England. Misconceptions have arisen from the notion that the compost retains too much moisture, or that watering can never or only very rarely be effected. These are obvious misconceptions, but which must be removed if it is to be proved that cultivation in leaf-mould is preferable to growing in fibre or other soils, and if its use is really practicable.

First of all the cultivation of Orchids as epiphytes under a glass roof should be condemned. None can dispute this.

Plants have constant need of nourishment during the period of growth; in theory, remembering their grasping habit, which enables them to hold on firmly, the possibility of cultivating them as epiphytes seems feasible, but in practice it is not so. In fact, it is a question of supplying the plants with what is essential to them by the intervention of the air, considered as a medium; this is not practicable, so they must be supplied by frequent waterings enriched with liquid-manure, which is hardly easier to accomplish. Then we must use a compost, and decide of what it shall consist. Fibres seem at first sight most suitable for their lightness and permeableness to air, but experience shows that they form too compact a mass, cutting off the necessary air from the roots. Then the most decomposed parts were removed, thus making a lighter compost, but one liable to dry too rapidly. To avoid this drawback, a certain quantity of sphagnum was added, to retain moisture given by watering without intercepting the passage of air. Such was the compost used, except for certain genera; for instance, *Vanda*, *Phalænopsis*, and others whose roots were more impatient of restraint, and which were grown in sphagnum only.

There was little or no nourishment in a mixture of fibre and sphagnum chopped together so as to render it sufficiently permeable; the only parts that the plants could directly assimilate were taken away. Sphagnum itself contains no nutritive matter, and the plants having no means of drawing nourishment from it, are obliged to draw upon the reserve store contained in the pseudo-bulbs; hence their dwindling as demonstrated at the Congress before mentioned. There is justification for the cultivation in sphagnum only of species such as *Vanda*, as these plants are provided with an extraordinary root system. Their roots have strong powers of absorption, and if carefully treated during the period of growth, the necessary matters can be supplied by watering, though there is always some difficulty in this way of growing them.

Now to consider compost made of decayed leaves or leaf-mould: of what should it be composed, and what trees or shrubs should provide the leaves?

Various analyses should be made to determine the relative values of leaves, and to find which is most suitable for each genus or variety of Orchid. Much remains to be done in this respect. We have tried to solve the

question by following natural indications. Leaves from the trees of woods and forests of our countries, after their fall and decomposition, serve perfectly to nourish exotic plants from any locality. A compost formed of these leaves, when used, as is the case with Orchids, for plants of small size, replaces and even improves upon the soil necessary for their establishment; on this theory is based my plan of cultivating Orchids. We will not enlarge on the nutritive properties of leaves after their fall; suffice it that their value is considerable, while such a mixture can be formed as no other manure can equal, especially for application in cases where the plants grow from seed, and are varied in character.

The basis of a compost such as this should always be the leaves of Oak and Beech, which are sufficiently durable, and with which any other leaves can be mixed, forming what we usually call leaf-mould. If our theory is tenable, as results induce us to believe, the culture of Orchids in leaf-mould may become general, provided that the necessary material is obtainable in all countries without fear of its becoming exhausted.

It remains now to describe its uses. Before using the compost, all leaves that are not sufficiently decayed should be sifted out, and if it still seems too compact a little rough sand should be added to ensure the passage of water. We use pots of the usual form, of which the depth is nearly equal to the width near the top; put one crock over the bottom to allow the superfluous water to run away, and so arrange the plants that the bottom of the pseudo-bulbs is on a level with the upper edge of the pot, making the soil firm but not hard, and covering with a light layer of sphagnum chopped into inch lengths. This addition is not essential, but is for appearance sake, and also because if the soil is exposed it becomes covered with minute growths that prevent the air from penetrating. We use fairly large pans when we have vigorous plants likely to remain in them for two or three years—but it is foolish to generalise, as experience only can teach details.

One question that seems to disturb those new to this method of culture is how to give water. We cannot enlighten those unfamiliar with this method without entering into long details; suffice it to say that the amount of water is regulated according to the genus of Orchid, its seasons of vegetation and growth, as well as the condition of each plant. The subject is an important one, and an inexperienced hand may do much mischief. If watering is judiciously managed, the leaf-mould is naturally more apt to dry too quickly, than to retain the moisture long enough to do harm. L. P. De Langhe-Vervaeke, St. Gilles, Brussels.

LINNEAN SOCIETY.—On the occasion of the evening meeting to be held on Thursday, January 16, 1902, at 8 P.M., the following papers will be read:—1. "On the Use of Linnean Specific Names," by Mr. H. J. GROVES. Exhibitions:—1. Branches of Cherry affected by the Gnomonia disease, with remarks on its effects and climatic causes; by Mr. A. O. WALKER, F.L.S. 2. Photographs and specimens of heads of wild sheep, to illustrate a recent suggestion as to the use of large horns in feral species; by Mr. J. E. HARTING, F.L.S.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—A general meeting of the Gardeners' Royal Benevolent Institution will be held at "Simpson's," 101, Strand, W.C., on Thursday, January 23, 1902, at 1 P.M., for the purpose of making certain alterations in the

existing rules, as recommended by the Committee of Management; and the sixty-third annual general meeting of the members of this Institution will be held at the same place, and on the same date at 3 P.M., to receive the report of the Committee, and the accounts of the Institution (as audited) for the year 1901; to elect officers for the year 1902, and other affairs; and also for the purpose of placing twenty pensioners on the funds. The Chair will be taken by HARRY J. VEITCH, Esq., Treasurer and Chairman of Committee, at 3 o'clock, and the poll will open at 3.15 P.M., and close at 4.30 precisely, after which hour no voting papers can be received. All the voting papers have been issued. If any subscriber has not received a copy, it is particularly requested that intimation be sent at once to the Secretary, G. J. INGRAM, at the Offices, 175, Victoria Street, Westminster, S.W. The annual friendly supper will take place on the same date, also at "Simpson's," after the annual general meeting, at 6 P.M., when Alderman ROBERT PIPER (of Worthing) will preside. Friends desiring to be present are asked to kindly notify the Secretary, at 175, Victoria Street, S.W.

"BOTANICAL MAGAZINE."—The January number opens with a fine illustration of *Crinum Johnstoni*, t. 7812, a native of British Central Africa, from which country some forty other species are now known. The present plant is intermediate between *C. latifolium*, which it resembles in the flowers, and the Cape *C. longifolium*, which it resembles in its long, narrow leaves, tapering very gradually to a point, but which are bright green, not glaucous, as in *longifolium*. The flower has a very long, cylindrical tube, expanding into a funnel-shaped limb, with white segments faintly striped with rose in the centre.

Angrecum Eichlerianum, Kränzlin, t. 7813.—A climbing species, with oblong leaves, notched at the apex. Peduncles opposite, the leaves long, slender, 2 or 3 flowered. Flower $2\frac{1}{2}$ ins. in the longest diameter, segments oblong, lanceolate, green; lip broad, spoon-shaped, acute, white. Native of Calabar.

Bauhinia gunnanensis, Franchet, t. 7814.—A graceful greenhouse climber, with tendrils and two-lobed leaves, the lobes short and blunt. The flowers are rosy-lilac, in loose terminal panicles. It is a native of Western China, and is cultivated in our botanic gardens.

Schomburgkia Thomsoniana var. *minor*, t. 7815.—A native of the Cayman Islands, to the N.W. of Jamaica. The pseudo-bulbs are ridged; the leaves broadly oblong-ovate, the numerous flowers in terminal racemes. Each flower is rather over 2 ins. in its longest diameter, the segments spreading, oblong-acute, yellow; the lip projects, its two side lobes wrap over the column, the anterior lobe divides into two oblong, obtuse lobules, rosy-violet in colour, and undulate at the margin. The species was originally described by REICHENBACH in our columns, 1887, vol. ii., p. 38.

Hibiscus Scottii, Balfour fil., t. 7816.—A hispid shrub, with ovate leaves, sometimes slightly lobed. The involucre consists of 10 to 12 linear bracts, and the corolla is $\frac{3}{4}$ inches across, yellow, with a central crimson spot. It is a native of Socotra. Flowered in the Edinburgh Botanic Garden.

TEA-SUPPLY OF GREAT BRITAIN.—According to a recent number of the *Journal d'Agriculture Tropicale*, the importation of Tea into England into 1885 was 182,433,215 lb., of which 63,794,025 lb. was from India, and

4,242,244 lb. from Ceylon; the remainder coming almost wholly from China. And as regards the 303,867,149 lb. of tea imported in 1900, 156,968,149 lb. was from India, 115,322,673 lb. from Ceylon, and only 21,852,642 lb. from China.

PLANTS IN FLOWER ON THE RIVIERA.—Mr. PROSCHOWSKY writes from Nice:—"May I add the names of a few plants in flower in my garden at Nice at Christmas to those named by Sir T. HANBURY as being in flower at La Mortola, a place undoubtedly less cold in ordinary winters than Nice. Here, in parts of my garden where the temperature is noted, no frost has taken place as yet, the lowest temperature recorded being 1.5° Centigr. on December 16, but some days of continual mistral, with the temperature rising in the day to 16° Centigr., caused the usual damage to many plants, in shrivelling up the leaves, flowers, and tender shoots. Several plants having lost the points of their branches through last winter's severe frost abnormalities occur in the season of flowering, which has for all tender plants been considerably retarded, even where no parts of the plants were actually killed, because the growth of all such plants commenced very late in the season. I can name, as an example, the different *Wigandias*, which generally flower here in midsummer, but last year did not flower at all, and only now commence to show the flower-buds. A few plants, among others, in flower here at Christmas, and now in the first days of January, not named in Sir T. HANBURY's list, are:—

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| <i>Ageratum mexicanum</i> | <i>Iberis sempervirens</i> |
| <i>Abutilon</i> var. | <i>Lopezia miniata</i> |
| <i>Begonia</i> Rex and others | <i>Lantana camara</i> and others |
| <i>Berberis nepalensis</i> and others | <i>Maurandia scandens</i> , Barclayana and others |
| <i>Bougainvillea glabra</i> v. <i>Sanderiana</i> | <i>Musa Ensete</i> |
| <i>Ceanothus divaricatus</i> | <i>Nicotiana glauca</i> |
| <i>Chamedorea</i> var. | <i>Pelargonium</i> hybrids |
| <i>Cestrum</i> (<i>Habrothamnus</i>) var. | <i>Passiflora Raddiana</i> |
| <i>Daphne indica</i> | <i>Plumbago capensis</i> |
| <i>Epipremnum mirabile</i> | <i>Polygalas</i> var. |
| <i>Eupatorium Morrisii</i> | <i>Salvias ianthina</i> involucreta v. <i>Bethelli</i> , <i>lantanifolia</i> , <i>eriocalyx</i> , and others |
| <i>Euphorbia</i> (<i>Poinsettia</i>) <i>pulcherrima</i> | <i>Saxifraga crassifolia</i> |
| <i>Eriocephalus sericeus</i> | <i>Senecio</i> <i>Gliesbrechti</i> , longifolius, and others |
| <i>Fatsia papyrifera</i> | <i>Sphaeralcea umbellata</i> |
| <i>Freylinia cestroides</i> | <i>Solanum jasminoides</i> |
| <i>Grevillea Thelemanniana</i> , the most floriferous plant I know, actually in flower every day in the year | <i>Sparmannia africana</i> |
| <i>Genista monosperma</i> | <i>Tacsonia mollissima</i> |
| <i>Heliotropium peruvianum</i> | <i>Tecoma capensis</i> |
| <i>Ischomorus</i> in var. | <i>Thomasia solanacea</i> |
| | <i>Veronica speciosa</i> and varieties |

FLOWERS IN SEASON.—We have received from Mr. A. HATTON, the gardener at The Quarry, Sevenoaks, Kent, a box of very fine flowers of *Helleborus niger* (Christmas Rose), apparently the produce of plants protected by glass during the flowering period. They average $2\frac{1}{2}$ inches in diameter, and are of the purest white, and at a slight distance scarcely distinguishable from those of the Dog Rose. The sender tells us that he had on January 6 cut forty dozen of the blossoms.

THE ULSTER HORTICULTURAL SOCIETY.—Just too late for inclusion in our Almanac, we have received intimation from the Ulster Society that their next Chrysanthemum exhibition will be held at Belfast on November 11 and 12, 1902.

SELECT VARIETIES OF SWEET PEAS.—Shortly after the exhibition of the National Sweet Pea Society in July last, we called upon Mr. W. SIMPSON, at the Grange Gardens, Sutton, who won the first prize in the principal class at that exhibition. We found that the exhibition flowers had been obtained from

a collection embracing as many as seventy varieties, but Mr. SIMPSON considered many of these were so nearly alike, or were inferior to others, that he had come to the conclusion that for garden purposes twenty would be sufficient to represent all the desirable colours and forms. In response to a request that Mr. SIMPSON would give us his opinion as to the best collection of twenty-four varieties, we were favoured by the following list, which may be useful to our readers when ordering seeds for the coming season. The varieties are Salopian, The Hon. F. Bouverie, Duke of Westminster, Othello, Mrs. Dugdale, Venus, Captain of the Blues, Lovely, Lady Grisel Hamilton,* Gorgeous, Emily Henderson, Miss Willmott,* Chancellor, Blanche Burpee, Lady Mary Currie, Prince of Wales, Triumph, Duchess of Westminster,* Prince Edward of York, Colonist, Royal Rose, The Hon. Mrs. E. Kenyon,* Lady M. Ormsby Gore, and Emily Eckford. The four varieties marked by * were figured in these pages August 3, 1901, p. 87. Mr. W. SIMPSON is gardener to R. C. FOSTER, Esq., and it is wonderful that from so small a garden he should have been able to take such a position at an exhibition. He had also some remarkable plants of *Euphorbia* (*Poinsettia*) *pulcherrima*, 7 feet high, with excellent foliage, and the appearance of other plants showed that, given greater facilities, Mr. SIMPSON would show himself a first-rate cultivator.

OTTO OF ROSE.—Speaking at the Pharmaceutical Society on the production of this valuable substance in Bulgaria, Mr. HOLMES continued:—

"I wish to direct the attention of distillers of essential oils in this country and our colonies to the fact that there are in this country localities, as in Devon, South Wales, and Ireland, as well as in our colonial possessions, where the requisite warmth, moist atmosphere and soil to grow Roses to perfection, exist, and that there are Roses more easily grown in this country than the Bulgarian variety, which in sweetness are not excelled by those of any European country. Among these may be mentioned the 'Unique,' a very floriferous, white-flowered form of *Rosa centifolia*; the ordinary *Rosa damascena*, or damask Rose of our gardens, the General Jacqueminot, a hybrid perpetual, and Madame Isaac Pereire, said to be the sweetest Rose grown. The old-fashioned Maiden's Blush has also a very sweet perfume, but, like the ordinary damask Rose, and the *Rosa centifolia*, its period of flowering lasts only during June. The perfume of Tea Roses is remarkably powerful in the yellow Rose *Maréchal Niel*, which has never, so far as I am aware, been utilised in perfumery, although the oil of *Henna* flowers is very similar to it in character, as is also that of *Bulnesia Sarmienti*. There is no reason, considering the advantages of horticultural knowledge and chemical skill and commercial enterprise possessed by this country, why an English otto of Roses should not in the future earn the same reputation that English oil of Lavender and Peppermint already possess. The only difficulty is that of the price of labour, but in this industry, as in that of fruit-picking, children can be employed without interference with their scholastic duties, and there are probably in Ireland many districts where suitable land could be obtained cheaply, and where the moist climate is eminently adapted for Rose cultivation. If a mechanical means of separating the petals from the calyx could be devised, the odour would undoubtedly be far superior to that of ordinary otto of Roses."

BOOKS.—At Messrs. SOTHERY's last book sale of the season at their rooms in Wellington Street, Strand, on December 17 to 19, "English Botany: or, Coloured Figures of British Plants," by J. SOWERBY, 36 vols., 1790 to 1814, realised £14 10s.; "Alpine Plants," by D. WOOSTER, 1874, £1 4s.; "Sylvia Britannica: or, Portraits of Forest Trees," by J. G. STRUTT, 1826, 18s.; "Description of the Genus Pinus, with Directions relative to the Cultivation, &c.," by A. B. LAMBERT, 1832, 14s.; "Illustrations of the Natural Order of Plants," by E. TWING, 1868, 14s.; "The Botanic Garden," by B. MAUND, edited by J. O. NIVEN, 6 vols., coloured plates, 1878, £2 6s.; "Ferns,

British and Exotic," by E. J. LOWE, coloured plates, 8 vols., 1872, £2 14s.; and "Nature-printed Seaweeds," by W. G. JOHNSTONE and A. CROALL, 1850, £1 4s.

A NEW-SHAPED EPERGNE.—Mr. J. WILLIAMS, of Oxford Road, Ealing, is sending out an epergne constructed so as somewhat to resemble a tree with outspread roots and drooping branches, the centre stem being left free of decoration so as not to obstruct the view across the table. Round the base and at the summit are tube-shaped flower-holders set at intervals, and so that, when the epergne is dressed, it has a very light look. The ornament is obtainable in silver-plated and in bronze colour, and measures about 2 feet in height.

FLOWER SHOW AT THE CAPE.—Cape papers record the occurrence of a horticultural exhibition, at which Sweet Peas and Roses formed prominent features. Considering that no country in the world is richer in beautiful and interesting flowers than the Cape peninsula, it seems a great pity that the horticulturists of the Colony do not avail themselves of the riches at their doors, and not copy the European procedures. Sweet Peas and Roses are, of course, both beautiful and attractive, but they should not be allowed to banish the specially beautiful native flora. This would furnish not only beauty, but variety and interest even exceeding that pertaining to Sweet Peas and Roses. There is room for both, and neither need be excluded.

RIVER-SIDE OPEN SPACE.—We are informed that a private Bill will be presented to Parliament next session at the instance of the Earl of DYSART, the object of which is to provide a river-side park extending from Richmond to near Kingston-on-Thames, for a distance of 3 miles along the Surrey shore of the Thames. It is proposed to vest this land in a public body, and preserve it in perpetuity as an open space. Lord DYSART, by way of a return, seeks permission, as Lord of the Manor, to enclose a considerable acreage of Lammas-land to the south of Ham village.

"THE GARDEN ANNUAL," prepared under the direction of W. ROBINSON (37, Southampton Street).—A very useful little book, but which was apparently sent to press before certain changes were made—thus, Mr. BURKILL is no longer at Kew, nor is Mr. JACKSON, nor Mr. NICHOLSON. Professor MACOWAN is not Director of the Botanic Gardens, Cape Town. Mr. THOMAS is not at Frogmore, and the changes at Sandringham have not been noted. Various changes have also taken place in certain private gardens which are not inserted.

"FARM AND HOME YEAR-BOOK" (W. ROBINSON, 37, Southampton Street), is addressed to stock-breeders, graziers, market-gardeners, and agriculturists generally. The information is so varied and good, as to render the publication one of the best of its class.

"THE LIVE STOCK JOURNAL ALMANACK, 1902" (VINTON & Co.), is replete with information suitable for horse-breeders, cattle-raisers, poultry keepers. It is interesting to see that whilst the average height of a race horse in 1700 was 14 hands, now it is 15 hands $2\frac{1}{2}$ inches. The illustrations of various pedigree animals in the advertisements are very interesting to the naturalist as well as to the farmer.

"BIBBY'S QUARTERLY."—*Bibby's Quarterly* (edited by JOSEPH BIBBY; publishers, J. BIBBY & SONS, Exchange Chambers, Liverpool), is very attractive and seasonable. There are

some capital coloured pictures, and the photographs of country life and of cattle are pretty as well as interesting to those learned in stock. The practical articles, such as that on "Uncle Sam in the rôle of Teacher," deserve attention, the following rules laid down for John Bull, junr., embodying some very necessary hints:—1. Be less self-complacent and more receptive of new ideas. 2. Put a little more thought and energy into your work, whatever it may be. 3. Travel around a little and study other methods. 4. Help to reduce the drink bill, alike as an end in itself, and as a means to accomplish the other ends.

FRUIT CULTURE IN THE UNITED STATES: RHODE ISLAND.—On this subject the census returns give us the following figures:—For the State of Rhode Island:—

ORCHARD TREES AND FRUITS.

| Fruit. | Number of Trees. | | Bushels of Fruit. | |
|----------------------|------------------|---------|-------------------|---------|
| | 1900 | 1890 | 1899 | 1889 |
| Apples | 213,598 | 207,230 | 339,445 | 239,367 |
| Apricots | 67 | 28 | 12 | 5 |
| Cherries | 2,193 | 3,014 | 1,329 | 689 |
| Peaches | 48,063 | 11,816 | 6,140 | 1,149 |
| Pears | 23,311 | 20,794 | 12,452 | 10,037 |
| Plums and Prunes ... | 4,327 | 1,183 | 571 | 138 |

The increase during the last decade is especially marked in Peach-trees, having increased 336,217, or 306.8 per cent.; the quantity of fruit produced increased by 434.4 per cent. Apple-trees went up by 3.1 per cent. Pear-trees increased by 12.3 per cent. The Cherry crop was increased by 92.9 per cent., but the number of trees decreased by 27.2 per cent. Plums and Prune-trees went up 265.8 per cent. The total value of all orchard products in 1899 was 155,571 dols. Some 779 farmers cultivate small fruits, the value of the produce being 57,292 dols. The fruits were Cranberries, Strawberries, Raspberries, Loganberries, Currants, Blackberries, Dewberries, Gooseberries, and others.

NEWLANDS, HARROW - ON - THE HILL.

IN all ages gardening has been the chief pastime of the scholar, and the masters of Harrow Schools of the present day pursue the peaceful and interesting occupation with as much zest as any of their predecessors. Some of the schoolhouses have very extensive and interesting gardens, and of them "The Grove" on the Church Hill, until lately held by Edward Ernest Bowen, M.A., whose death occurred recently whilst on a holiday tour, is one of the oldest, and in which the grounds are to a great extent left in their natural state. At a little distance on the hillside the gardens of R. Bosworth Smith, M.A., are rich in hardy flowers and shrubs; and on the slope nearer the town the head-master's garden is pleasantly situated.

Newlands, situated on the eastern slope of the hill which is known as Harrow Park, is one of the finest houses, and its master, Frank E. Marshall, Esq., M.A., who has occupied it since its completion thirteen years ago, has, in the formation of its garden, so liberally and effectively carried out his own ideas, that it is one of the most beautiful in the district. The house, situated on the high ground, is partly clad with *Wistaria sinensis* and *Ampelopsis Veitchii*, and has on the garden side a terrace furnished with flower-beds (see Supplement). On the slope below stand a noble Walnut-tree of considerable age, a fine Spanish Chestnut,

and other large trees. Beyond them are beds of great size and irregular borders, planted with flowering shrubs and herbaceous perennials, two classes of plants which are specially favoured by Mr. and Mrs. Marshall. The large bed nearest to the house is planted with hybrid *Rhododendrons*, among which clumps of *Lilium auratum* find a place, which made a striking display last summer. The next bed is principally of Roses, which were also very floriferous last year; and others are principally of *Azalea mollis* and *A. pontica*, which, after furnishing a brilliant display of flowers, brighten the scene with the bright scarlet, red, and yellow of the autumn tint of their leaves. The long bed at the side of the view is planted with flowering shrubs and hardy herbaceous perennials, among which in summer annuals are planted to fill in spare spaces. In this clump some bushy trees of the Sea-Buckthorn give a novel feature with their branches of greyish-green leaves, and orange-scarlet fruits. Two bushes of the male kind are planted with them, and hence the effective show of berries. Effectively arranged are the different varieties of double-flowered scarlet Thorns, and representatives of most of the finest flowering trees and shrubs, and very fine selections of *Pæonies*, *Irises*, *Delphiniums*, and others of the stronger growing showy perennials; and nearer the margins of the beds, the rarer and smaller growing alpine, and other perennials.

The farthest bed in the home garden, within which the turf is well kept, is a massive one of the best named varieties of *Rhododendrons*, all of which are now large specimens, and well furnished with flower-buds.

Beyond, and stretching away to the kitchen garden, the grass is allowed to grow, a part of the grounds is studded with an occasional flowering and fruit-tree that is very charming, especially in the summer time. The kitchen-garden at the point farthest from the dwelling-house has been well arranged. Mr. Marshall is fortunate in having as head gardener ever since he has been at Newlands, Mr. David Page, a diligent man of very high attainments in his profession, and with over forty years experience in gardening in Harrow, an experience which has taught him much about the peculiarities of a clay subsoil, and other matters which render the district a hard one to garden in to anyone not used to it.

Mr. Page's plan has been never to plant anything without providing for it a good depth of loam or other soil known to be suited to it, hence the fine condition of the *Rhododendrons* and other things in the garden. For plants of large growth the natural soil of the district is excellent after they have attained a good size, but in the earlier stages use of a lighter soil is advisable. On this plan the kitchen-garden was laid out, with a good depth of loam on the surface, and it grows some of the best vegetables to be found in the county. In this part of the garden Mr. Page years ago, having an accumulation of rotten grass which had been deposited in a heap when the lawn was mown, tested its value as a manure, and he found it to be a very strong and efficient fertiliser. Since that he has always had set aside the mown grass as manure, instead of taking it to the rubbish-heap, as is the custom with many. The surrounding country and a lake in the lower ground are of much beauty, although the district in other directions is getting covered with houses.

At one side of the house is the old fruit garden, once part of the old manor-house adjoining. The fruit-trees here are very aged, as are even the fruit-bushes. But age does

not interfere with their bearing, for last season the Red Currant-bushes bore an enormous crop. In the garden is a plantation of a very fine variety of red-fruited Raspberry which originated on the place; and the old fruit-trees on the walls still bear well in some years.

A walk having Roses on arches spanning it runs across the garden, borders of herbaceous perennials being planted on each side—a beautiful arrangement that is being adopted in many gardens (fig. 8). At the end may be seen a singular-looking old brick wall, the purpose of which is not known.

The glasshouses and pits provide for the propagation and cultivation of flowering plants; and in one of the houses there are a few Orchids which thrive and flower well,

times would be better pulled up, and their places filled with fresh plants. By these remarks it will be seen that even for one house of moderate length, say 100 feet long, a selection of 100 plants is not too many, and that it would be wise to have another 100 plants ready in a week or ten days after the house is planted out. I always follow this practice here, planting as we do a great number of houses, and to sow 400 Cucumber-seeds at one sowing is my general rule.

I remember the first year I was here bad luck seemed to follow me; the houses were strange to me then, and I was more or less working as a blind man, and several houses had to be replanted a short time after the start. It was then that I found that it is as necessary to have a good supply of plants as it

trary to most growers, I never use crocks, but moss instead, which we get from the woods close at hand. This is much better than crocks, which take up much space in the pots, and destroy or injure the roots when the plants are repotted or planted.

We take much pains with our Cucumbers. The sowing cannot be done too carefully, for it pays over and over again. All the materials used in the sowing are sterilised, of which there are many methods. A quick process is to heat them, thus preventing all possibility of nematodes, or eel-worms, remaining alive. We are more than troubled with these pests; they have entered the ground in the houses to a great depth, and we cannot get rid of them, which is a very serious matter, although we take greater precautions every year, and find benefit therefrom. I also sterilise the seeds; this I do the night previous to sowing. The plants thus raised have proved to be far superior to others not so treated. The seeds are saved from plants grown entirely in sterilised mould, and only pure water is used. I can fully recommend this practice to all growers of Cucumbers.

To go back now to the propagating-house. The pots, moss, and the mould are put upon clean benches, which have been brought in a few days beforehand, the pots being new or clean ones, it being a dangerous thing to use dirty pots. Half of all the failures in Cucumber-growing are brought about by carelessness, and nothing else. In new places, Cucumbers generally do well, and pay well. No other plant that I know of has so many enemies and is subject to so many diseases, brought about by intense culture. Year after year, the same crop in the same houses, without any change. Only by taking every precaution can failures be prevented. Another plague is rats, and no matter what I do, they will find their way into the houses, and even pull up the young plants after the seed itself has disappeared and changed into plant-food; therefore I always cover the pots at night with sheets of glass or empty boxes, which answer well enough till the plants become too large to be thus covered. It is as well to use the same mould for the young plants as will be used in the beds, never sifting it, but breaking it up by hand when too large, which can be done when using it. When the mixture is too fine, the water does not run away freely, and there is less room for air. A little mould only is required at the time of sowing. A small portion of moss at the bottom, a handful of mould at the top, in which the seed is placed with the finger and thumb, point downwards, and plenty of space is left for a top-dressing afterwards, which for that matter might reach above the rim of the pot.

When long stable-litter is used on the staging in which to plunge the pots, not much water is required, even when there is a good bottom-heat; and this itself is a great saving of labour, and favours the health of the plant. The manure will also surround the plants with moisture containing ammonia, which for Cucumbers is of much benefit. I always make it a practice to re-arrange the plants frequently, afford moisture to the bed—never, in fact, letting it get dry long, or there would be no evaporation. It is a good rule to examine the plants frequently for insect pests. The plants will soon show if the bottom-heat is too high by the weakly growth that they make. The glass should be kept quite clean inside and out, for sunshine is of the greatest help in making strong plants; the staging should therefore be as high as it is possible to make it.

Where young Cucumbers are growing, the gardener will find something to do every day;



FIG. 8.—THE OLD MANOR-HOUSE FRUIT-GARDEN AT NEWLANDS, HARROW-ON-THE-HILL.
(SEE P. 28.)

although they have to a certain extent to take their chance along with the other plants. Both Mr. Marshall and his gardener do all they can to further the interests of gardening in the district, and especially among the cottagers and allotment-holders, who, mainly owing to their exertions, now take a great interest in gardening, and hold a cottagers' show in which the produce is of very fine quality.

MARKET GARDENING.

THE RAISING OF CUCUMBERS.

It is always a wise plan to make sure of a large number of Cucumber-plants, as mishaps will generally occur, and this is but too true where the growing of Cucumbers on a large scale is concerned. The best of us have failures, and many houses have to be planted for the second time, not counting the few plants which might here and there remain at a standstill, and which at all

is of fuel. It is wise, however, not to keep such plants too long in reserve, unless one has the opportunity of repotting them and looking after their wants, or insect pests will very quickly attack them, and are but too soon all over the place.

When it is possible to make a hotbed in one of the houses, no better thing could be made; but it requires more time, and my practice is to clear part of the propagating-house, which is always kept quite free of insect pests by burning flowers-of-sulphur when it is empty. The staging is covered with fresh stable-manure—the longest of it, and in this I partly plunge the pots. Where room is no object, 48's, or even 32's pots are the best sizes to be used. Another plan is to use smaller ones, and repot. Many growers sow the seeds in boxes, and pot off the plants in small pots in a few days. This last practice has much to recommend it, where heavy crops are required in only part of the season, and such plants I have found are more like those raised from cuttings in coming into bearing in a shorter space of time. Con-

in fact, it is on such careful treatment that good results depend. This work, as it is done mostly in the early part of the year, under all possible disadvantages, requires all the attention it is possible to afford on the part of the cultivator. The seeds will germinate freely in a bottom-heat of about 85°, with a lower top-heat, say of 70° to 75°. Air should be admitted to the house whenever the day is sunny and not very cold. A. A. Fabius, Redlands Nursery, Emsworth.

EARLY MELONS AND POT CULTURE.

AN early lot of Melons will be valuable in many gardens where fruit is required in quantity in April or May. I am aware that April is full early, but in the most favoured parts of the kingdom with a good command of bottom-heat, and by growing those kinds that mature quickly—that is, a small or medium-sized fruit—Melons of good flavour may be had at the time named. Pot culture is not generally practised, but much may be said in its favour, as the plants when grown in pots are more readily managed; the roots being curbed, more food may be given when the fruits are swelling. I think Melons are more appreciated early in the season than later, and though there are difficulties to contend with so early in the season, yet they are not so great by this mode of culture. The plants set more freely, and when set will take a liberal supply of food, this causing rapid growth—which is not always the case with plants given more root-space. There are diverse ways even with pot culture. I have seen the Melon fruited in very small pots and do well, but when grown thus the pots were plunged in some rich rooting-material and the plants were grown as cordons, only one fruit being taken from a plant, and of course the plants were much closer together than when larger pots are used, say 12-inches or larger.

There is a gain in running the growths up quickly and securing the first fruit that sets, and plants grown thus in a shallow bed get more bottom-heat and can be fed liberally. I note this mode of culture to show that a hard-and-fast line even with Melon culture is not necessary. Many growers even now have not Melon-pits or houses, and are obliged to grow one crop in frames, and of course at this early period of the year it would not be advisable to sow for frame culture unless there was ample top-warmth from hotwater-pipes. On the other hand, with a good top-heat and only manure to furnish bottom-heat, by using large pots sunk in the manure up to the rims, I have cut Melons in the early part of May. Grown in pots there is a great saving of time, as it is an easy matter to add new heating materials, but the pots should be on a firm base to prevent any sinking, and so arranged that the plants are not more than 12 to 18 inches from the glass. The latter should be covered at night in order to maintain an even temperature and save hard firing.

Of course, with a Melon-house or pit with a path in it the cultivator's task is easier, as the plants can be attended to in any weather; in frames this cannot be done. Even with these difficulties, Melons may be grown with a little extra attention.

My note more concerns house culture, and often shelf-space in houses may be given to pot-Melons when a whole house could not be afforded.

For many years I grew our earliest lot of Melons in 12-inch pots—some in 10, even—in Pine-pits at the back of the pits, and very

well they did, but, of course, heavy crops were not attempted; two fruits to a plant, or three at the most, were obtained, but in the position named the plants could not get bottom-heat. There was, however, a genial warmth from the hotwater-pipes, and the temperature would never fall below 65°. The first fruits that showed were secured, and if only two took the lead we let well alone and did not trouble about others that followed. With pot culture, close stopping is needed, but, on the other hand, the plants make a short-jointed growth and show their flowers sooner than when given more root-space.

When a whole house or pit can be spared for the plants, so much the better, as here much the same kind of treatment can be given, but larger pots can be used and more fruits allowed to each plant, as more trellis space can be afforded. It may be asked, when large pots are used and three or four fruits to a plant secured, what is the gain, as the same results can be obtained by planting out? There is a great saving of time with pot culture; there is less risk of the plants running too much to leaf and failing to set, and some of the strong growers are at times subject to this if the roots get into a body of manure. Another important point not to be overlooked is, that the fruits can be finished better when the grower has good command of the roots. I mean, the supply of moisture can be checked at the right moment.

I need not dwell upon simple details, such as raising the plants; this is well known, but I would add it is best to secure a strong plant at the start, and this at the present time of year is easier said than done. At the same time I think well of the old method of raising the seeds in small pots, sowing two or three seeds in a pot, and when the plants are well above the soil, thinning to the strongest. Many raise the earliest plants by placing fibre in the evaporating pans and plunging the pots. It is a good plan, but the seedlings should never be far from the glass.

I am not an advocate for growing the Melon in poor soil; far better curb the roots and feed freely, thus securing an early set and earlier fruit, and with pot culture these latter points can be attended to—even for a late autumn supply pot culture is valuable. I have also noticed that plants given pot culture rarely go wrong at the base, and this with early plants is a great gain. G. Wythes.

MELIOSMA MYRIANTHA.*

THOSE who look at the multitude of small flowers that bedeck the branching panicle of this shrub, will recognise the appropriateness of the name (fig. 9, p. 31). The flowers are greenish-yellow, and give the plant the appearance of a *Spiræa*. Nevertheless the order to which it belongs, *Sabiaceæ*, is remote from *Spiræa*, and is of interest to the botanist from the position of the stamens opposite the petals. As an ornamental plant it may take a prominent place in the greenhouse, and it might even prove hardy in sheltered situations in the south and south-west. Perhaps also it might prove suitable for forcing purposes. Our illustration was taken by Mr. W. G. Smith from a plant obligingly submitted for our inspection in July last by Messrs. James Veitch & Sons. The plant is a native of Japan, the Corean Archipelago, and probably of some parts of China.

* *Meliosma myriantha*, Siebold and Zuccarini in *Abhandl. Acad. Münch.*, iv., ii. (1843); Hemsley, *Journ. Linn. Soc. Botany*, vol. xxiii., p. 145; Franchet and Savatier, *Enum. Plant. Japon.*, vol. i. (1875), p. 91.

LILIES.

IN some ancient pictures of the Virgin Mary, the artist shows her holding in her right hand a spike of *Lilium candidum*, emblematical of purity; and no better Lily in the whole family could have been chosen. It is as remarkable for its rich agreeable fragrance as it is for its refined form and pure white flowers. Nearly all Lilies are conspicuous for striking colours, and characteristic for perfume. *L. candidum*, *L. longiflorum*, and *L. auratum* on a quiet evening fill the atmosphere with a delicious odour. In such as *L. testaceum* the fragrance is fainter, still very sweet. Some again of the European Lilies are not altogether agreeable. There are, however, some 170 species from the four quarters of the globe to choose from, this being somewhere about the number of species of Lilies at present known, and a few hybrids. Japan gives us somewhere about fifty-six varieties of Lilies, China about twenty-five, and now that the country is being opened up, we have every reason to expect from the recent finds that important species in considerable numbers will be added, and what is of still more importance, species combining great beauty with accommodating habits, and of easy culture. India, including Burmah and Nepal, contributes about seventeen species, all of great beauty, but not all of easy culture in Europe. America contributes about thirty species, amongst which are plants of noble aspect. Europe, including the Caucasus and Siberia, contributes upwards of forty species, representing many of great beauty and value for effect in groups in mixed flower-borders.

Few of the hybrid Lilies appear to be of any great merit, except *L. testaceum*, syn. *excelsum*, and *Isabellinum*. "The Wizard of Santa Rosa," as Mr. Burbank is called by the people of the United States, has been hybridising the Lily family for some years, and I notice one has got into cultivation under his name. Whether he will be more successful than those who have been hybridising to get new Lilies for the last hundred years, we shall see in time. When I saw him in his home at Santa Rosa, he was very sanguine, and had then sent out his first batch of chickens to see what the world thought of his handiwork.

The Lily seems to resist the efforts of man to breed mules, and if one is to judge from the hybrid *L. Parkmanni*, which, in my opinion, to be made a really distinct plant, it wants another cross. It is a seedling from *L. speciosum* and *L. auratum*, but is much too close to *L. auratum*; a further cross with *L. speciosum* might make it a really good mule.

It is some seventy years since the well-known nurseryman, Mr. Groom, of Clapham, near London, had a fine collection of Lilies, and as a boy I remember his price for *L. speciosum* was 5s. to 105s. per bulb; he was what in those days was considered a great importer of Lilies, and from a descriptive list of his, which came into my possession some 25 years ago, containing names and descriptions of some Lilies he had raised, I managed to collect most of them from various sources and under various names, but not Groom's names. By a careful examination of the flowers I arrived at the conclusion he used as parents *Davuricum* var. *spectabile*, from Siberia, with *L. bulbiferum* from the Austrian Alps.

I see some recent writers think that the varieties commonly known in gardens under the name *L. umbellatum*, were raised from the Japanese vars. of *elegans* (*Thunbergianum*), but so strongly was I impressed in studying the parents, *L. bulbiferum* and *L. davuricum*, and taking all the points of the children into con-

FIG. 9.—*MELIOSMA MYRIANTHA*. (SEE P. 30.)

sideration, I see no reason now to change my opinion.

The points which determined my judgment on the parents was the fact that when the flowers of these lilies, which got destroyed

by a spring frost, and the plants not being able to produce seed, they usually produced on the top of the plant bulblets, which, when planted, grew into bulbs. I will not dispute, but some of the stronger vars. of *elegans*

might have been used also, but after all *elegans* is only a geographical form of *L. bulbiferum* and *davuricum*, so I consider my arrangement of all the children remains good under the specific name *L. davuricum* as a pre-

ferable name to *elegans*, and thus it is under the name *L. davuricum* I will describe those I recommend for South Africa. Some will ask, "What is in a name?" I say there is a great deal; it is in plants as important as in children—a mode of distinguishing one thing from another—and in the case of plants it is a great advantage when we can range our garden names under a species; it prevents a great deal of confusion in being able to show the relationship.

Of recent years a new system of naming hybrid plants raised in gardens was introduced by Sir Michael Foster; it has much to commend it. The first syllable of each of the parent's name is taken, and supposing I have rightly determined the parentage, and the mother had been *L. bulbiferum*, the name would read bulb-day, the motive being to know from whence the plant had been derived; but I must say such compound names sound strangely to one's ears. In the very early days, most Japanese Lilies came to Europe through the Dutch, who, I think, were the only Europeans allowed to trade with that country, and I think they were only permitted one vessel a year. At that time Dr. Siebold was settled in Kobe, and, being a plant lover, sent many Lilies and other Japanese plants to Leyden, in Holland, and from thence they were distributed.

The Lily, like the Daffodil, has had its periods of falling out of public favour, so that from Groom's time till some thirty years ago the only Lilies seen about were in old gardens, and those of the commonest kinds, which required no special attention. Now, like the Daffodil, I think it has come to stay, as each year adds some new species requiring less attention and better adapted to the great varieties of soil and conditions in the numberless gardens, small and large, to be found wherever the English language is spoken. The fact that *Lilium longiflorum* eximium succeeds so perfectly in South Africa augurs well for the successful culture of many, if not all, Lilies in this favoured climate.

Lilies are propagated by scales, and this can be done so rapidly that it will be only a few years from the introduction of a new Lily till it is on the market at quite a moderate price. Unlike Daffodils, when a new variety is raised the increase is slow, and it is a long time before a new Daffodil can be bought for a few pence. Happily for us, it is not necessary to wait in either case for moderately-priced bulbs, as there are plenty of both Lilies and Daffodils of the highest order of beauty, which can now be obtained for a few pence per bulb.

It was in 1875 when the first two bulbs of what is now known as *Lilium Harrisii* syn. Easter Lily and Bermuda Lily (*Lilium longiflorum* eximium) were taken to Philadelphia from Bermuda. In three years the two bulbs represented 100, and as the source was known, and the value of the Lily for Easter-flowering appreciated, a supply of bulbs was got from the gardens of Bermuda, and in 1882, under the name of *L. Harrisii*, it was put on the market. The inhabitants of Bermuda, finding they had something of value, collected these Lilies from the different private gardens, and went in for extensive culture. It is recorded that somewhere in the nineties the export of these Lilies from Bermuda amounted to two million bulbs, their estimated value being £15,000. About this time cupidity and ignorance led to sad disaster. Anxious to increase the output, manuring was resorted to, and a correspondent informed me of one farmer who planted two acres, and manured them with all the refuse he could find, including rotten Potatoes: the result being the Lilies were

killed, or so badly diseased that the crop was lost. Of so much value was this export to Bermuda, that the Imperial Government sent out a man almost specially to see what could be done in getting rid of the disease. I chanced to meet this man in New York on his way to Bermuda, and hearing what his main object was, gave him the key to the situation, and asked him to let me know what he found; and when he did so, he stated that manure had been at the bottom of the trouble. In these days it is difficult to turn back the clock of progress, and as Bermuda failed to meet the growing demand for this Lily, it was somewhere about the middle of the nineties a call was made upon the Japs for *Lilium longiflorum*, who lost no time in sending collectors to the islands of the Japanese and Chinese seas, who collected every bulb of this species they could find. The outcome of this indiscriminate collecting was some eight varieties, some tall, some short, some with small flowers, some with large flowers, some with split flowers, some with few flowers, and some with many flowers on a stem. It so happened that a large importer, knowing that I was going to Japan, asked me to look into the matter and report. I did so, and after inspecting some fields of this Lily, I drew the attention of the traders to the most desirable types to cultivate, and advised such should be increased separately, and as the supply of the higher types met the growing demand, to throw away the inferior kinds. I had the pleasure of seeing that, before I left Japan, my advice had been acted upon; and from a photograph of a field of *Lilium longiflorum* eximium now before me, all apparently true, showed me and surprised me that in so short a time this wonderful people, in their desire for trade, should have cleaned their stocks so quickly. I also see from a report that the export of *L. longiflorum* from Japan to New York and London in 1899 amounted to about £15,000, the entire export of Lilies from Japan that year amounting to £25,000. I think Bermuda has not gone back on its £15,000, possibly now £20,000, and Japan equally advanced. You can therefore imagine the extent of the supply and demand, and that mainly to grow under glass for the cut bloom, and then throw it away. The Bermuda Lilies reach the market first, and the grower gets the flowers ready for the Christmas demand. Those from Japan, coming later, meet the Easter demand, and supply flowers during the London season. During five to six months this Lily is to be had in London and all over the British Isles, as also all over the American Continent.

Should anyone desire to start a new industry in the Cape Peninsula, this can be done with *Lilium longiflorum* eximium, and thus share in a profitable enterprise. No need to go abroad for the material; it is at hand, and soon millions of bulbs could be shipped to London. You cannot improve upon the species growing in your gardens. I was curious to know the origin of the stock in the Municipal Gardens; I asked Mr. Chalwin, the Curator, what he knew about the plants, and his reply was: "I have been Curator over twenty years, and they were in the Gardens when I first took up my duties." These Lilies must have been brought here about the same time they were taken to Bermuda, either directly or indirectly from Japan. Prior to our getting *Lilium longiflorum* from Japan, the stock of *L. longiflorum* in Europe was a short-flowered, dwarf variety, possibly worn out from long cultivation in an ungenial climate. It is now some thirty years since we commenced to have consignments of Lilies from Japan, and no doubt some of these

early lots of *Lilium longiflorum* eximium had found their way to the Cape and Bermuda about the same time. It will please you when I say that fifteen flowers on a plant of *L. longiflorum* eximium was the greatest number known in Japan. On this fine form of *L. longiflorum*, Mr. Chalwin informs me that twenty flowers on a stem is no unusual thing. Therefore, according to the size of the bulb you put in the ground will be the height of the stem and the number of the flowers. To prove this, I got Mr. Chalwin to lift a strong plant between 4 and 5 feet high, and measured its bulb, which was 13 inches in circumference, and from base of bulb to surface of the soil 8 inches. I would recommend that you plant 10 inches deep, measuring from the base of the bulb, and my reason for this recommendation is that this plant is supported mainly from the stalk-roots; some Lilies have only roots at the base of the bulb, others have base-roots and stalk-roots. The stalk-roots are the main support of the plant, so that every encouragement has to be given to these; while the roots from the base are working in the interest of the bulb, the stalk-roots are working in the interest of the flowers. One bulb lifted had one flower; this bulb measured 6 inches in circumference, and 28 inches high.

Those species of Lilies which have no stalk-roots, have to do double duty in supporting a flower and remaking a bulb, consequently the increase is less rapid. I ought here to mention the longest flowers I could find in the Municipal Gardens measured 8 inches in length, and from tip to tip of the open flower 6 inches. I question if Japan or the finest culture in Europe ever reached this size, and with twenty flowers on a stem, be it remembered, shows another argument in favour of your charming climate. Some may ask what was the shortest flower I found in the gardens. I think I must say 8 inches long, my eye not being able to detect much difference in the thousands I looked over. P. Barr, in "Cape Times."

(To be continued.)

POPULAR AND STERLING VARIETIES OF PEAS.

DURING the twenty-five years I presided over Longford Castle Gardens, I grew most, if not all, the leading varieties of the culinary Peas, and had opportunities of testing many of the novelties before they were put into commerce. The ground in which I grew the Peas each year was trenched between 2 and 3 ft. deep, and three layers, 6 inches thick each, of well-decayed horse-dung were incorporated with the soil in the process of trenching. In this specially prepared land I sowed my second-early, mid-season, and late Peas in early January, February, and March, and afterwards, at intervals of a fortnight or three weeks up to the end of the third week in May, making a large sowing for late crop the end of the first week in June, as three months later the pods will take a longer time than previous crops did to fill. As soon as the Peas appeared through the ground, a little soil was drawn up to the plants on either side of the rows. They were then supported by spray or spreading sticks stuck firmly into the ground on either side of, and close up to, the haulms, following this with a layer of half-rotten manure to the thickness and width of 6 or 9 inches as a mulch, the Peas being sown thinly rather than otherwise in every case.

I may say that the Peas for yielding gatherings of green Peas towards the end of May were transferred from 3-inch pots to a border at the foot of a wall having a south-west

HOME CORRESPONDENCE.

THE RAINFALL AT RUGBY.—I am sending you the tables of the rainfall, carefully kept here for the past two years. I thought it would interest some readers of the *Gardeners' Chronicle* to compare the rainfall for the two years:—

| 1900. | Inches. | 1901. | Inches. |
|---------------|---------|---------------|---------|
| January ... | 3.84 | January ... | 0.63 |
| February ... | 3.50 | February ... | 0.70 |
| March ... | 0.53 | March ... | 1.31 |
| April ... | 0.58 | April ... | 2.82 |
| May ... | 1.24 | May ... | 1.30 |
| June ... | 3.00 | June ... | 3.15 |
| July ... | 0.83 | July ... | 4.79 |
| August ... | 3.62 | August ... | 2.40 |
| September ... | 0.61 | September ... | 1.85 |
| October ... | 2.42 | October ... | 1.45 |
| November ... | 2.27 | November ... | 0.82 |
| December ... | 4.13 | December ... | 4.39 |
| Total ... | 26.57 | Total ... | 25.61 |

Both years, 1900 and 1901, are below average here, but it will be noticed that December in each year has been far above the average, the average fall for that month being 2½ inches. *H. Berry.*

RAINFALL AT TEMPLE HOUSE, BERKSHIRE.

—The appended table gives the quantity in metric inches of the moisture measured in a rain-gauge having a funnel with the diameter of 5 inches, and placed at 1 foot above the level of the ground, at an elevation of 105 feet 9 inches above sea-level:—

| Month. | Total Depth. | Greatest fall in 24 hours. | Number of Days on which 0.1 or more fell. |
|---------------|--------------|----------------------------|---|
| | Inches. | Depth. | Date. |
| January ... | 1.07 | .16 | 27 |
| February ... | 1.65 | .99 | 4 |
| March ... | 1.47 | .45 | 2 |
| April ... | 2.57 | .73 | 3 |
| May ... | 0.60 | .18 | 30 |
| June ... | 1.33 | .62 | 30 |
| July ... | 2.33 | .78 | 12 |
| August ... | 2.35 | .50 | 25 |
| September ... | 1.18 | .65 | 16 |
| October ... | 2.19 | .98 | 16 |
| November ... | 0.43 | .19 | 13 |
| December ... | 3.60 | .81 | 24 |
| Total ... | 20.85 | .99 | Feb. 4 |

The average rainfall for the year is 27.50 inches, and that for 1900 was 26.35 inches. *George Groves.*

LATE PEAS.—I have read with interest the several articles in this journal concerning late Peas, and I for one should like to see a list published of some ten or twelve good varieties for succession, with dates of sowing the same, if some gardener of wide experience would oblige, as I feel sure there are many young gardeners greatly embarrassed as to which varieties to grow after removing from one county to another. *C. B., Cambs.*

JAPANESE LARCH.—I read with keen interest the remarks of "W. H. Massie" in this interesting Larch, in your issue of 21st ult., and so far as habit of growth and disease is concerned, I endorse all your correspondent says. None of us yet know the timber-value of *Larix leptolepis*, as grown in this country, I admit; but watching its behaviour as I have done for a considerable period, and comparing its hardihood growing alongside of the Tyrolean and so-called native Larches, from one-year seedlings up to several feet in height, I am convinced that this interesting species has a future for general estate purposes. *John Arthur, Carlisle.*

CORDON PLUM-TREES.—Doubtless as Mr. G. Wythes says, p. 473, December 28, Plums, when the soil is suitable, can be successfully grown as cordons; or to be more correct, perhaps, this I think is the inference to be drawn from his remarks. On soils containing chalk where wood growth is not gross, cordon Plums will do very well; but it is a system which should never be attempted upon strong, moist soils, in which the Plum makes a gross

growth. When I took charge of the gardens which I now manage, there were, and are now, upon a west wall, the following Plums, *Heal's Hybrid*, *Gisborne*, *Jefferson*, *Victoria*, *Transparent Gage*, and *Green Gage*, as well as cordon Pears and trained Cherries. The Plums were the usual fan-trained, and were fruitless. The wall was only about 5 feet high. The trees had made a very strong growth, which had as regularly been cut back to the top of wall. I advised the raising of the wall, but this was not allowed. Not to be beaten, I suggested bolting iron standards to the wall, and wiring 4 feet 6 inches above top of wall; this I was successful in getting done. The next season the trees made their usual rampant growth, 3 to 4 feet long in some cases. These long top shoots I carefully tied back to the wire, cutting back only such as were not wanted. To fill the wires at a reasonable distance apart, these top growths were not shortened in the least, the result is that each season since, the trees have borne good crops of splendid fruit. A short time ago I was at the house of a friend, looking at a Gage which he had taken much care of; he was lamenting its unfruitfulness. I observed the gross shoots at top of tree, and I asked what would be done with them. "Oh," said my friend, "the gardener will prune them all off." "Now," I said, "you nail them up to the wall of the house, all their lengths, and you will get plenty of fruit." I may say that the Cherries are coming into fruit by being allowed to extend their growth. The indiscriminate use of the knife has much to do with the unfruitfulness of much wall fruit, especially upon strong soils. *W. F. E.*

THE RUST OF CHRYSANTHEMUMS.—I was amused to read the singular remarks of "W. F. E." on p. 13 with reference to the *Chrysanthemum-rust*, I am thinking he has this fungus-pest rather strongly. However, I beg to assure him that I have no desire to lull him or anyone into what he is pleased to term "fools' paradise." I am thankful to say that our plants are free from the disease, and as there have been scarcely any remarks in the gardening press of late, I concluded the pest to be dying out. If gardeners growing these plants would kindly give their experience of this matter in these pages, we should learn how far I am right. *A. J. L.*

—I have read in your paper with much interest the opinions of your various correspondents on this subject. As A. J. Long and W. J. Godfrey hold contrary opinions as to the trial which I reported as regards the effects of manure, will they kindly explain how it was that the unmanured plants escaped without a trace of the rust? No particular varieties were experimented upon, but cuttings were all taken from the same stock. Several gardeners who saw the plants could not account for it. When the article of "W. S." appeared in the *Gardeners' Chronicle*, p. 420, I thought it would be of interest to give a report of this trial. *McCutloch, gr., Denton, Grantham.*

THE CARNATION OR JULY-FLOWER.—Much has been written of late as to the term "Carnation," whether it designates merely a colour of the flower or plant; perhaps the following from *Flora seu De Florum Cultura*, by John Rea, gent., 1676, may prove both instructive and interesting. He says, p. 156, "July-flowers (as they are properly called from the month in which they bring forth their beautiful flowers) are indeed the pride of summer, as Tulips are the glories of the spring. Heretofore we had of them many good varieties that were not seedlings, as the old Carnation." Here he evidently refers to it as a particular flower of a certain colour. Yet further he says, "The gray Hulo, the blue Hulo, the white Carnation," here it is the plant, not the colour, "and others." He continues, "but now not any of them are to be found in any of our gardens, yet we are plentifully supplied with many fine varieties of July-flowers, such as are yearly imported from Flanders and other parts of the Netherlands; raised from seeds, these

aspect early in February, staked, and protected for a time with Spruce-boughs from the effects of cutting winds and frosts, the rows being planted obliquely in order to ensure the haulms having the full benefit of the morning, mid-day, and afternoon sun.

For yielding early gathering of Peas I relied upon sowings of *Lightning*, *Ringleader*, *William the First*, and *Exonian*, made in pots the end of December, and out-of-doors early in January, at the same time that sowings of *Carter's Stratagem*, *Pride of the Market*, *Telegraph*, and *Telephone*, were made for succession. These four varieties, for vigour, productiveness, size, and handsome appearance of their pods, and the fine quality of the Peas with which they are well filled, have not yet been excelled. *Wordsley Wonder*, containing from nine to twelve large Peas in each slightly-curved pod; and *Royal Jubilee*, a grand, good all-round Pea, the handsome sword-shaped pods each containing from nine to thirteen large and deliciously-flavoured Peas; and *Elephant*, were reliable main-crop varieties. *Carter's Michaelmas*, *Late Queen*, *Veitch's Sturdy* (the result of a cross between *Veitch's Perfection* and *No Plus Ultra*), *Prodigy*, *Autocrat*, and *No Plus Ultra*, still hold the field against all new comers as being the most reliable varieties in every way for yielding supplies of Peas of first-rate quality throughout the autumn months, until cut down by frost; being of vigorous constitution and prodigious croppers, producing, mostly in pairs, large, handsome, well-filled pods, containing from nine to eleven large, high quality Peas each.

Sixteen years ago last September, in looking through *Tynninghame Gardens*, *Prestonkirk*, in company with Mr. *Brotherston*, then as now the head gardener at this picturesque situated residence, I saw the Chelsea "triplet" Peas, i.e., *Sturdy*, *Prodigy*, and *Autocrat*, in fine condition, and heavily laden with large, well-filled pods; the crops being in every respect as good as those at the time growing in *Longford Castle Gardens*, nearly 500 miles farther south.

As the result of the cultural treatment described above, I may say without, I hope, being considered egotistical, that with samples of the produce taken from most of the varieties of Peas indicated above, I have invariably succeeded in taking high honours at London and leading provincial shows, at which "special" and other prizes, as well as medals, were offered collections of single dishes of Peas. In fact, I have never failed to secure extra good crops of any one particular variety of the numerous varieties which I tried and subjected to the cultural treatment described above—varieties not mentioned in this list, in which are only enumerated about one-and-a-half dozen of the very best varieties of the Pea in cultivation. I may add that in time of drought the several ranks of Peas were kept amply supplied with water at the roots; but owing to the fact of good surface-dressings of manure having been laid on the ground immediately over the roots on either side the plants, it was not necessary to incur much labour in this direction. The reading of the interesting and useful notes contributed to the *Gardeners' Chronicle* on this subject by Mr. *Wythes* (p. 388), and other correspondents (p. 440), stirred up a favourite topic in my mind, and to such an extent that I concluded that there was still room for a further note on this important subject that some readers might peruse with advantage now that the seed-ordering time is close at hand. *H. W. Ward, December 14.* [We have always understood that nitrogenous manure is not of any special value to Peas, if it be not actually injurious. *Ed.*]

we call Dutch flowers, of which we have some very good sorts." From this it appears that the Carnation and its variants was distinct from these latter. He then gives a list of 360 named and distinct sorts, so that at this early period it seems to have been the practice of naming any new or good variety after gods, goddesses, men, women, and events. For my own part I had deemed this a modern invention to please, and for mercantile purposes. But of Mr. Rea further, "A multitude of these are often brought over to London, and then sold at mean rates to gardeners, who sell them again to others who delight in flowers, commonly for twelve pence a layer" (this rather exceeds the present usual price); he adds, "but the truth is, most of these mercenary fellows about London are very deceitful, and who ever trusts them is sure to be deceived, as I myself have often been, even by such of them as I had by many benefits obliged." Truly times have much improved since 1676. He presently describes the "Dutch July-flowers" as commonly large, thick, and double; the more ordinary sorts are all of one entire colour [selfs], as red, purple, scarlet, or white, some deeper coloured, others paler; these single colours are little esteemed, but those flowers chiefly valued which are well striped, flaked, or powdered upon white, or bluish with darker or lighter red, crimson, or Carnation, sadder or brighter purple, deeper or paler scarlet; so all the Dutch flowers may be comprehended under these three sorts, that is red and white, purple and white, and scarlet and white; in all which there are fine varieties." Here he appends the florists' names of over 100 of these flakes, so that at this period the Carnation must have been held in high repute, indeed, so much so, that Mr. John Rea there delivers his predilection in verse:—

"For various colours Tulips most excel,
And some Anemones do please as well,
Ranunculus in richest scarlet shine,
And Bear-ears may well these in beauty join,
But yet, if ask and have, were in my power,
Next to the Rose give me the July-flower."

Cultural directions are also freely given, all of which are almost identical with the present methods of the "July-flower" fanciers. With "the Clove" he is not much impressed, for he says, "As for Clove, July-flowers, and others of a more ordinary kind, such may be set on banks or beds, and increased as the former," &c. *Harrison Weir, Poplar Hall, Appledore, Kent.*

FAILURE OF LILY OF THE VALLEY TO FLOWER SATISFACTORILY.—Your correspondent's description of his failure points to too much heat having been employed, but as he had others in Cocoanut-fibre refuse which did well, the cause of the trouble may be in the peat, which may not be porous enough. A good substitute for Cocoanut-fibre refuse, which we always use with success, is a mixture of sifted coal-ashes 4 parts, and loam 2 parts, which, with a steady temperature of 75°, gives no trouble. *E. N., Chatham.*

POTATOS.—In your issue for February 23, 1901, I observed, under the heading of "A New Way of Growing Potatos," some remarks respecting the communication made by M. Noel Bernard to the Académie des Sciences respecting the action of *fusarium solani* in the formation of Potato tubers. Have any of your readers made any experiments this season with a view of ascertaining how far the results obtained by M. Bernard are duplicated in England? If so, a report on their work would be extremely useful and interesting. *S. B. Dicks.* [This is a matter which might well form the subject of experiment at Chiswick. Ed.]

PALMS.—Will you kindly allow me space for a few comments upon the interesting articles on garden Palms by Dr. Udo Dammer, a gentleman with whom I have had some interesting correspondence, and to whom I owe some valuable information about Palms likely to grow here, but which have not yet been

tried. Through a mistake in the delivery of a letter, Dr. Dammer was prevented during his recent short stay on the Riviera from visiting my garden, modest enough as yet in appearance, but containing many different species of plants in a young state, notably Palms, which I have tried for some years to collect, in so far as they can be cultivated in the open. When Dr. Dammer states that some Palms *a priori* to be considered delicate, have resisted 6.5° R. without any protection, may I be allowed to doubt, until precisely informed otherwise, if the temperature was taken just on the spot where the said Palms were growing; and whether these Palms were absolutely without any protection? One must have lived here for years, and tried to make delicate plants live, to understand of what enormous importance shelter is in this climate, especially when it is a question of avoiding cold by shelter from above. I could name any number of species which I have lost in exactly similar conditions of soil and exposure but without any shelter, while plants of the same species and same strength did not even suffer when growing underneath some tree, or protected by a little roof of thin cloth, but open on all sides. The cause is, of course, that the radiation of heat from the ground is lessened in this way, and the layer of cold air sinking down during the night is intercepted. I think that Dr. Dammer's informant, though in all good faith, may have been misled by the temperature taken at some distance from where the said Palms were growing, perhaps even at another level. I have in the *Gardeners' Chronicle*, March 23 and 30, 1901, under the title, "Frosts on the Riviera," published a few notes as to the effect of the frost here; also in the number for May 19, 1900, on the effect of the frost of the foregoing winter (in this last-named article a printer's error has put +2 centigr., instead of -2 centigr.). Now my two thermometers, placed at about 100 and 90 metres altitude, give as the very lowest temperature during last winter -3° and -3.5° centigr., but for weeks without interruption the temperature touched zero, and often descended to -2°; and herein, in the long-continued cold spell of weather, often accompanied by the always pernicious dry mistral-wind, lay the cause of the often (as I found later in the year) fatal result to delicate plants. I know well that the temperature sank as low as -6.5° centigr. in certain places, as for instance in a horticultural establishment situated not far from my grounds, but at about 8 to 10 metres altitude. For all I know, the temperature may even in the lowest parts of my own grounds have sunk as low, but I have no thermometer in those parts. Still I measured on February 16, on a little reservoir, ice 4 centimetres in thickness; ice which had not melted for weeks, but kept on getting thicker by each night's frost. But here I will note a very characteristic thing, namely, that on another reservoir situated still lower, but sheltered above by the dense crowns of evergreen Oaks, no ice whatever was found on the same day. The lowest temperature which I have recorded in my ground, several years ago, namely -4.5°, was followed by numerous losses of plants, even of such species as I do not find delicate in ordinary winters; which here, at Nice, means winters with occasional drops of the temperature to -1° or -2° centigr., so that I should not, until given absolute proof to the contrary, believe that some of the most tender plants have really borne unhurt a temperature of -6.5° R. Places only a few metres distant from each other may, according to exposure and shelter from certain winds, present extraordinary differences in temperature; and there is nothing impossible in the supposition that a thermometer may register -6.5° R., and another 10 or 20 metres away only -3.5°. Lastly, may I add a few other remarks to Dr. Dammer's interesting articles. *Chamaerops Birroo*, which I find indicated in Count Kerchove de Denterghem's list of Palms as synonymous with *Livistona rotundifolia*, Mart., but in C. Solomon's book, *Die Palmen*, as a distinct species of Siebold and Martius is, to judge from the many specimens I have of it here,

as Dr. Dammer thinks, only a variety of *Chamaerops humilis*, a very polymorphous species. In the same book I find *Chamaerops cochinchinensis*, Lour., indicated as a synonym of *Rhapis c.*, Mart.; and in Kerchove's list as a synonym of *Rhapis c.*, Blume. Now I have many Palms under the name of *Chamaerops cochinchinensis*, but none could doubt but that they are real *Chamaerops*, but most of them I have raised myself from seeds presenting apparently no difference from the seeds of *Chamaerops humilis*, L., and which were certainly not seeds of a *Trachycarpus*, while the seeds of *Rhapis* are unknown to me. Now Dr. Dammer has recognised a *Trachycarpus* in a Palm labelled, somewhere on the Riviera, as *Rhapis cochinchinensis*; and there also appears to be found a *Chamaerops cochinchinensis* in the horticultural trade, which really is a *Chamaerops*, only not from Cochinchina, but simply a variety of *Chamaerops humilis*, L. I have bought both plants and seeds from the same firm, but do not know from whence they were originally derived. Will persons living in countries where Palms grow wild, kindly communicate with me with the object of my obtaining fresh seeds of new Palms to try here, either by purchase, or in exchange for other seeds. *A. Robertson-Proschowsky, Parc "Les Tropiques," Chemin des Grottes St. Hélène, Nice, Alpes Maritimes, France.*

NOTICES OF BOOKS.

THE WOODLANDS' ORCHIDS.*

UNDER the above title that pleasant writer, Mr. Frederiek Boyle, has written a book in which he sets forth interesting particulars of how Mr. R. H. Measures came to commence forming his now fine collection of Orchids, and the progress made during the time it was being brought to its present state of excellence, together with an enumeration of some of its specialties, a few of which are represented by excellent coloured plates.

The author does not pretend to give exhaustive particulars of the items of the Woodlands' collection, neither does he pose as giving cultural instructions on any point, but in the matter dealt with much useful information will be found to which even the Orchid expert will not take exception; while, taking the book as a whole, it is lifted out of the specialists' class, and rendered acceptable to the general run of readers of books for amusement by the many pleasant stories told of the adventures of collectors of some of the Orchids enumerated, their wanderings, perils, and dangers before ultimate success was achieved—the stories being in most cases as near facts as it is possible to get under the circumstances.

The work with index extends over 274 pages, and is illustrated by sixteen excellent coloured plates, and a portrait of Mr. J. Coles, the clever gardener at The Woodlands. In the first chapter is told how that Mr. Measures commenced his collection as a healthy relaxation during an exceptionally busy commercial life. The inevitable followed; that which was begun without much thought or faith in it as a welcome change from business cares became of absorbing interest, and brought a great deal of pleasure, thus accomplishing the desired end.

The work goes on to give descriptions of the principal Orchid-houses and their occupants, together with pleasant information relating to some of them. Between the chapters of descriptive matter are stories of sensational incidents in Orchid collecting.

* *The Woodlands' Orchids*, by Frederiek Boyle, 1901. (London: Macmillan & Co., Limited. New York: The Macmillan Company.)

They are founded on fact, being derived from friends of the late Mr. Roehl and others, and contained in letters from the travellers concerned; but in the telling Mr. Boyle has to draw on his fertile brain, and for that reason the stories lose nothing in the telling. Let not the reader think that any of the stories are overdrawn, for the ordinary life of the plant collector on active service is full of such incidents, to which he becomes so inured as to consider them quite in the ordinary course of events; and often, after great perils are passed, he thinks no more about them, and for that reason, together with the fact that some of them never return to tell the tales, thousands of thrilling incidents which the writer of fiction would not dream of are never related. Collectors' stories are told of *Cattleya Bowringiana*, *C. Mossiae*, *C. Skinneri alba*, *Vanda Sanderiana*, *Phalaenopsis Sanderiana*, *Dendrobium Phalaenopsis Schrederianum*, *D. Lowii*, *Cœlogyne speciosa*, *Brassavola Digbyana*, *Sobralia Kienastiana*, *Cypripedium Curtisii*, *C. Stonei platytenium*, *C. Spicerianum*, *Odontoglossum Harryanum*, *Oncidium splendens*, and *Bulbophyllum barbigerrum*; and in them and the rest of the work, Mr. Boyle, being himself a cultivator of Orchids, is enabled to avoid inaccuracies, into which inexperienced writers are likely to fall, although little errors by slip of the pen have crept in. For example, in mentioning *Bulbophyllum Beccarii* as the giant of the genus at p. 253, the author says its "stem is 6 inches in diameter." The rhizome, which is the part of the plant alluded to, may be 1 inch in diameter, and 6 inches between the comparatively small pseudo-bulbs bearing its gigantic leaves.

The work is one which will be read with pleasure both by the Orchid specialist and by the far larger number of readers who know little about Orchids; and it is just one of those books which pleasantly carries the interests of a "hobby" into the far country beyond its present domain, and in all probability it will do good by getting converts to the Orchid cult.

THE SEED CROPS OF 1901.

IN sending you my views upon the seed crops of 1901, I regret I cannot give you a very satisfactory report, as the anticipations of the early part of the year have fallen very short of fulfilment. Perhaps the most disappointing crop has been that of Early Peas, both round and wrinkled. Although at one time they promised well, they only yielded less than half a crop, the consequence is that such varieties as Earliest-of-All, Eclipse, and Gradus are of a higher price than has been known for many years; in fact, the stocks are at the present moment practically exhausted. Telegraph, Telephone, and other market varieties have an upward tendency.

The Radish is another crop which is unusually short. The acreage planted for seed was an average one, but the dry weather and black-fly played such havoc with it that in some districts the crops were practically decimated; and the French crops proving much less than anticipated have made Radish seeds not only very scarce, but unusually dear.

The Brassica tribe: as a whole the crops of these have been fairly good, and have been harvested in very fine condition. I estimate that the supply will be fully equal to the demand. Another disappointing crop has been that of Carrots, of which an average average was put out for seed, but the dry weather so

injured the growing crops that in some districts the yield was less than half of what was anticipated, such leading varieties as Altringham and Intermediate are very high in price, and with a short crop in France, they will further increase in value. The Mangel crop has been a good one, and prices rule very moderate. The acreage of Swede planted out was scarcely up to the average, and the yield varied very much. I doubt if many crops in Essex and Kent yielded more than sixteen bushels per acre, while other districts produced fully forty bushels per acre. The seed was harvested in splendid condition.

Yellow Turnips also yielded well, and prices for these are lower than usual. White Turnips, on the other hand, are short, and for such choice varieties as Grey Stone and Purple-top Mammoth, prices are advancing.

POTATOS.

These have yielded well, with the exception of early varieties, which are advancing in price, while others are comparatively cheap. There has been a brisk enquiry for seed Potatoes for the Cape, the varieties principally in demand being Early Rose, Pink Beauty of Hebron, Windsor Castle, Supreme, and Up-to-Date. I observe that complaints have been made that the Government has placed orders for seed Potatoes with German houses. If this were the case the English growers would have just reason to complain, for as we in England have to pay the War Bill it is only right that the orders should be placed in this country. But as a matter of fact, the Government have not so far as I know of ordered any seed Potatoes. Orders have come from Cape houses for large quantities of seed Potatoes, but the difficulty has been in getting them shipped. One line of steamers possesses practically the monopoly of the quick carrying of goods to the Cape, but the demands of the Government for space on these boats have been so great that English merchandise has been shut out frequently at the last moment. The consequence has been that Cape houses requiring the Potatoes immediately, and finding that they could not rely on the shipments arriving in time for planting, cancelled their orders with English houses and placed them with German and French houses, who were able to ship them promptly. I have had orders for considerably over 1,000 cases of seed Potatoes cancelled by one firm; on the other hand a German house informs me that they despatched between 4,000 and 5,000 cases to South Africa. As we pay very heavily for an efficient Navy, I should have thought that the Government could have employed fast cruisers to take stores and war material to the Cape without shutting out shipments from English merchants, and thus driving trade away from the country. *John K. King, the King's Seedsmen, Coggeshall and Reading.*

Obituary.

CHARLES ROLLISSON, a well-known Yorkshire gardener passed away on December 26, in his eighty-fourth year. In his early days he worked in the gardens at Temple Newsam, and thence he went to Middleton Hall, near Leeds, and subsequently to The Ridge, Pannal, where he served under three masters, during the long period of forty-five years, the present one being W. B. Bateman, Esq. He was a relative of the late Messrs. Rollicsons, of Tooting, a very successful grower of Orchids, and a good plantsman—in fact, he was an all-round gardener. His loss is sincerely mourned by a large circle of friends.

SOCIETIES.

BECKENHAM HORTICULTURAL.

JANUARY 3.—Mr. H. Cannell, Swanley, gave his experience of Canna cultivation during the past fourteen years. Thinking there was something in them as flowering plants he took them up, although he was told he would never do much with them; nevertheless, nothing daunted, he persevered, until now, when staged at exhibitions, as no other firm has ever staged them, they are jokingly called Cannell's Flamers. He told his audience that in raising new varieties, colour, size of petal, and persistence, were very necessary features, and he gave some hints on removing plants in flower to long distances, and the salient points in raising plants by seeds and division of the roots, and in general cultivation. *M. W.*

KENT COUNTY CHRYSANTHEMUM AND HORTICULTURAL.

JANUARY 3.—The fourteenth annual meeting of the above was held on this date at Mr. Lewis's Restaurant, Blackheath, Mr. H. J. Jones, of the Ryecroft Nursery, Lewisham, presiding. There was a good attendance of members, and the report and balance-sheet was read, showing a sum of upwards of £10 in favour of the society on the year's working. Mr. H. F. Tears was re-elected President, and Mr. F. Fox the Hon. Secretary.

CHESTER PAXTON.

THE opening lecture for the present year was delivered by Mr. R. NEWSTEAD, at the Grosvenor Museum, on Saturday, the chair being occupied by the President, Mr. John Weaver, who briefly introduced Mr. Newstead. The subject was entitled "The Mammals of the British Isles (Past and Present)."

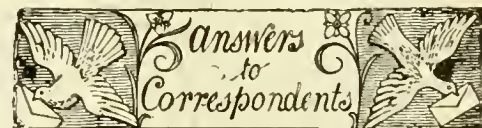
The lecturer dealt chiefly with the mammals inhabiting the British Isles within the historic period, which he said amounted to forty-seven terrestrial species, of which the wolf, beaver, brown bear, and wild boar are now extinct, and the two kinds of rats (*Mus rattus* and *M. decumanus*), the rabbit and the fallow deer had been introduced. Excluding the squirrel, which is said to have been introduced, Ireland had only nineteen species of mammalia.

The bats were dealt with at some length, and the food of these somewhat uncanny but highly beneficial animals was described, chiefly from an examination of their rejectamenta, which had been found to contain a large percentage of moth remains. In dealing with the members of the remaining families, nearly all the species were passed in review, most attention being given to those animals which more or less affect the crops and stores of the horticulturist and agriculturist. The fossil animals were only briefly referred to, but illustrations of the remains, together with restorations, were thrown upon the screen, representing the Mammoth, Woolly-rhinoceros, Cave-bear, &c., as found in the cave deposits of North Wales.

The lecture was illustrated by sixty lantern slides, those illustrating the bats being of great interest, as having been taken from life by Mr. Newstead.

In the discussion which followed, questions were asked in reference to the destructive habits of the short-tailed field vole (*Arvicola agrestis*), the common mole, the brown rat, and the long-tailed field mouse.

On the proposition of the Chairman, seconded by Mr. N. F. Barnes, a very hearty vote of thanks was accorded to Mr. Newstead.



AMERICAN BLIGHT ON APPLE-TREES: B. K. There are several remedies, but that recommended by M. C. Joly, a Vice-President of the Central Horticultural Society of France, gives good results. To 7 lb. of soft-soap add 1 lb. of train-oil, two or three handfuls of soot and flowers-of-sulphur, mixing these in a pailful of lime-water. When incorporated, throw in as much powdered clay as to make the mixture of the consistency of butter. Spread a cloth beneath the tree, and scrape off all the moss and rough bark, taking great care in clearing out the crevices and angles about the fruit-spurs, &c. Remove the cloth, and burn everything that has fallen upon it; then paint the whole of the trunk and main branches, giving an extra coat to cracks and crevices. This

should now be done without delay, and the rain will wash the soap mixture down to the roots, killing such aphides as may be lurking round the collar of the root. It is a good plan to lay bare the roots, and dress them and the soil with freshly slaked lime, or drench the soil with soapuds.

ANNUALS FOR CUT BLOOMS: *Bristol.* Hardy species: *Godetia* Lady Albemarle and others, *Linum grandiflorum*, *Centaurea Cyanus* minor, Sweet Sultan, mixed; dwarf Hyacinth, flowered Larkspur; Sweet Peas, in great variety; Wallflowers may be got to flower the first year by sowing early under glass, and transplanting; *Dianthus Hedewegi*, &c. Tender species: such types of *Asters* as Jewel, Cocardean, Victoria, Ostrich Feather, pyramidal, quilled, and many others; *Gloxinias*, *Verbenas*, *Lotus Jacobaeus*, *Zinnias*, *Martynia fragrans*, *Petunias* (also perennial), *Primula sinensis* in great variety, *Salpiglossis variabilis*, East Lothian Stocks, *Tropaeolum Lobbianum*, &c. The tender species flower early if sown in warmth in March, and grown under glass till planted out in May, or grown in the greenhouse all the season, *Gloxinias* excepted, which want intermediate-house treatment.

ANTHRACITE COAL AND A TUBULAR BOILER: *G. S.* As a fuel none is better, it being slow of combustion, and giving off great heat; but it will not burn well unless there is a rather tall chimney, so as to create a strong draught. As the cost of the freight in your town in Gloucestershire would be low, you would doubtless find it as economical as coke.

APPLES ROTTING ON THE TREES: *B. K.* This is doubtless caused by some fungus, as *Monilia* or *Fusicladium*, which gains access to the fruit through the eye, or by wounds and abrasions of the skin. Some varieties of Apples have thin skins, which may be penetrable by the spores of fungi. The trees liable to these attacks should be dressed twice in the growing season with the Bordeaux Mixture.

BEGONIAS, &c.: *Bristol.* It will be about ready for starting the tubers or raising Begonias from seed, at the beginning of February. If you can mix a large proportion of tree-leaves—say, Oak, Beech, or Chestnut, with the stable-litter, and throw the materials into a heap for a week or ten days, turning them twice in that length of time, the bed will not heat irregularly, or get dry in parts. Make it 15 inches wider and longer all round than the frame you intend to put upon it, and thus allow space to put a lining of hot manure round the sides. Do not put any tubers, seeds, or plants into it till the steam thrown off has got sweet; always afford air, if only a quarter of an inch, at night, and cover warmly at night. Top-heat need not exceed 70° by night, or 80° by day: bottom-heat 85°. A bed of finely-sifted coal ashes, half-decayed leaves, fresh tanner's bark, or cocoa-nut fibre refuse, 6 inches thick, should be placed on the bed after the frame is in position—this for plunging pots and pans in.

BOOKS: *Crispium.* The book you describe is the first edition of Miller's famous Dictionary. Except as a curiosity, it is of no value.

GLASSHOUSES: *F. B.* In the absence of an agreement, the "fixtures," if used for purposes of trade, are removable; but there are removable and irremovable fixtures. To the former belong the wooden frames and glass of a glasshouse, with sills simply bedded in mortar on brick foundations set in the soil; and pits, and the hot-water pipes that heat these structures. To the latter belong the boilers set in the earth or below the floors of glasshouses. The law or custom in regard to those fixtures is getting greatly modified from what it used to be. You can use any kind of material for the sides and ends of the houses instead of brickwork; but if the glasshouse has adjoining buildings in the tenancy of other persons, you must be guided by the borough rules,

which differ in various places. In regard to this matter, you will be wise to consult the surveyor of the borough. You may apply for a new lease just previously to the expiry of the old one.

NAMES OF FRUITS: *T. R.* The Apples sent are certainly not Blenheim Orange. There must have been a mistake on the part of the person from whom you had the tree. The variety you have very closely resembles Duke of Devonshire.—*Witley.* 1, Downton Pippin; 2, Scarlet Nonpareil.—*R. W. R.* Ne Plus Meuris.

NAMES OF PLANTS: *Eden.* The specific names of some of the plants sent cannot be given without seeing flowers. 1, *Cotyledon* sp.; 2, 3, and 6, species of *Cereus*; 4, *Rochlea falcata*; 5, *Stapelia* sp.; 7, *Maranta Makoyana*.—*E. W.* *Dendrobium aureum*, often called *D. heterocarpum*.—*R. B., Shrewsbury.* A very good form of *Cymbidium Tracyanum*.—*W. D.* 1, *Eupatorium Weinmannianum*; 2, *Begonia subpeltata nigro-rubra*; 3, *Acalypha marginata*; 4, *Lastrea aristata*; 5, *Cyrtomium caryotideum*.—*W. H.* *Euphorbia (Poinsettia) pulcherrima*, a very old garden plant cultivated in warm-houses, for the highly-coloured bracts which accompany the flowers. Hints upon the cultivation of the plants are given occasionally in our weekly article "Plants under Glass."

NEW ADIANTUMS: *P., Naples.* The small-fronded variety is entirely new to us, but the larger one, is, we believe, *A. Hodgkinsoni*, one of the very numerous forms, or home-raised hybrids from *A. fragrantissimum*, which itself is of garden origin, and probably a natural hybrid between *A. cuneatum* and *A. Moorei* (amabile of commerce), raised at the Pine-Apple Nurseries some twenty years ago. *G. S.*

OUR SUPPLEMENTS: *G. W.* If you have seen photographic representations (sixty in number) of our Supplements, you may be sure this has been done without our sanction. The contents of the *Gardeners' Chronicle* are copyright, and piratical reproductions may entail serious consequences.

PHALLENOPSIS LEAVES: *F. Harrison.* The leaves show well defined examples of what is commonly called Orchid-spot or disease, the cause of which is not yet defined. The cause has been assigned to an unsuitable house, or to one where there is a direct current of heat from the pipes, or to one subjected to sudden falls in the temperature, or anything else likely to cause failure of the tissue in places. Try a change of house, if possible. Place on a shelf, or suspend near the glass.

PLANTING WALL ROSES: *An Amateur.* Plant in February, and cut in moderately severely a month after planting. Select half-a-dozen of the finest resulting shoots, and let the others grow on as they may. Spread out these finer shoots radially, loosely slinging them up with bast, so that they have some movement, and wait with patience. By always laying-in young shoots at the base of the plants, and checking strong growth in the upper shoots by fixing them rigidly to the wall, and giving them tips a downward direction, the upper parts cannot grow to the detriment of the lower. Very strong run-away shoots in the upper parts may be stopped—that is, cut back partially, or be entirely removed. Whenever it is seen that certain shoots are getting a predominance, do not hesitate a day in putting matters right. A floriferous bronzy-orange, deliciously perfumed Rose, not often seen now-a-days, and very good for a warm wall, is *Jaune Desprez*, and one you might include in your list.

PRICE OF ORCHIDS: *A. Gutsell.* Every plant that you have named could be purchased of ordinary trade size for 7s. 6d. to 10s.; a few probably for 5s., from the nurserymen.

RAISING BRIAR STOCKS: *E. O.* These can be raised by sowing the seeds of the common

Dog Rose in the spring in beds in the open ground. The haws must be laid in a heap to rot, and then the seeds must be rubbed out in water and dried. It will then be necessary to separate them by rubbing between the palms of the hands in dry sand. If stratified in fine earth or coarse pit-sand in a cold frame, they will start to grow sooner when sown in the spring. The seedlings appear mostly the first year, but some seed is sure to remain without germination till the next year. The shoots of the Dog Rose taken off with a heel of older wood may be struck in the open ground like other Roses. They should be inserted in late September or in October, without waiting for the leaves to fall. A Rose stock is fit to be worked when of the thickness of a quill-pen, at the least for a bush plant.

SKELETONISING LEAVES: *Skeleton.* There is no better way than to lay them to rot in soft water till the membranous parts can be brushed away with a soft brush. This process does not take "a few years," but may be completed in a few months.

TALL SCRAGGY GLOIRE DE DIJON ROSE ON A WALL: *An Amateur.* Cutting it down to within 3 feet of the soil is one method of getting the wall covered with shoots, but in the case of very old plants, one year's flowers are usually sacrificed, as the plants break slowly and late if they break at all. Another and safer one is to unmail the stem and branches, and retrain them serpentine fashion, so as to bring the uppermost branches to within 6 feet of the soil. By so doing, shoots will arise at each bend almost as surely as if the branches were cut back at these points; and these young shoots should be encouraged, and they will in time cover all bare spaces, and take the place of worn-out branches. Do not curtail their liberty over-soon or over-much, as the greater freedom the better and stronger the growth, and the greater the display of flowers. Of course, the plant must be pruned in the usual manner, laying-in as much of the best of last year's shoots as space can be found for.

THE DECAY OF GRAPES: *A Subscriber.* The loss of fruit was, as we indicated in the last issue, due to damp air.

TULIPS WITHOUT ROOTS: *W. B.* We could detect the rudiments of roots, and suppose that given more time these would become numerous, and the flowers be produced in due course under cool treatment. Each bulb contains a perfect flower. We are unable to tell you why the roots are produced so abnormally late.

COMMUNICATIONS RECEIVED.—*W. Sutton*—*H. Coleby*—*T. Hammond*—*W. J. G.*—*G. S.*—*Messrs. Chisholm & Co.*—*G. C.*—*W. D.*—*H. Kempshall*—*G. N.*—*J. E. J.*—*W. R. & Co.*—*T.*—*Buenos Ayres*—*A. W.*—*G. P. M.*—*E. B.*—*E. C. C.*—*Thays*—*J. D. A.*—*F. E.*—*W. S.*—*W. J. G.*—*J. J. W.*—*A. D.*—*R. D.*—*S. B.*—*D.*—*W. A. C.*—*J. M.*—*W. G.*—*H. M.*—*A. H.*—*Rev. H. F.*—*A. W. G.*—*G. N.*—*G. A. P.*, *Naples*.—*J. M.*—*R. B.*—*G. H.*

CATALOGUES RECEIVED.

SEEDS.

GEE & SONS, Biggleswade, Bedfordshire.
KENT & BRYDON, Darlington.
W. DRUMMOND & SONS, Ltd., Stirling, N.B.
ALBERT F. UPSTONE, 35, Church Street, and 1, Market Street, Rotherham, Yorks.
FRANK DICKS & Co. (late DOBIE & DICKS), 66, Deansgate, Manchester.
HERD, BROTHERS, Penrith.
F. URQUHART & Co., 11, Union Street, Inverness.
TILLEY, BROS., 133, London Road, Brighton.
JOHN K. KING, Coggeshall, Essex, and Reading, Berks.
M. CUTBERTSON, Rothesay, N.B. (Also Dahlias, Roses, Pansies, and Herbaceous Plants).
WM. CUTBUSH & SON, Highgate, London, and Barnet, Herts.
W. DRUMMOND & SONS, Ltd., 57 & 58, Dawson Street, Dublin.
CUNNINGHAM & WYLLIE, 98, Mitchell Street, Glasgow.
CHARLES SHARPE & Co., Ltd., Sleaford (Wholesale List).
EDMONDSON BROS., 10, Dame Street, Dublin.
ARMITAGE BROS., Ltd., High Street, Nottingham.
CHRYSANTHEMUMS.
II. CANNELL & SONS, Swanley, Kent.

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



VIEW IN THE GARDENS, NEWLANDS, HARROW-ON-THE-HILL.



THE

Gardeners' Chronicle

No. 786.—SATURDAY, JAN. 18, 1902.

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THE RATIONALE OF EVERGREENS.

WE do not appreciate our blessings till they are withdrawn. In like manner we fail to realise how much our evergreens contribute to the beauty of garden and shrubbery, park and landscape, till some gale of unwonted force, or some frost of unusual severity, carries them off. It may be we become conscious of something wanting as we leave our own well-stocked grounds and pay a visit to a friend who has not made evergreens a study, and then the thought dawns upon us that the sombre foliage of the evergreen is that which has given colour and life to the surroundings we have left behind us.

But how many have given a thought to the meaning of evergreens? Who of us, in spite of our admiration for them, can tell why some trees and shrubs have deciduous leaves, while others retain their verdure all the year? Has climate, age, situation, soil, individuality, fertilisation, fruit, foliage, mode of growth, anything to do with the problem? Shall we, in these dull days, when the garden is bare, and little can be done out-of-doors, wander round the estate and examine the trees, whether indigenous or exotic, and try to learn something about this important subject?

Close by is a copse, and while the others beat and shoot, we will observe and think. The first thing that strikes us is, that most of the trees are bare. With the peculiarity relating to Beech and Oak pollards, which retain their dead leaves, we must try to deal

another time. As we look around, however, we see a striking contrast. The Elm is bare, but the Holly is as green as at mid-summer, the Hazel is leafless, but the Fir and Yew are verdant. We thus quickly separate all the trees into two groups, and call the one deciduous, because the leaves all fall in the autumn; the other, evergreen, because they have foliage the whole year through. In the first group we have such trees and shrubs as Oak, Elm, Hazel, Poplar, Hornbeam, Birch, Beech, Willow, and even the Larch tree, though it is a Fir. The evergreens contain the Holly, Yew, Ivy, Fir, Laurel, Daphne, Laurustine, Arbor-vitæ, Bay, Aucuba, and many others.

We soon become aware, however, that the number of native trees with deciduous leaves greatly exceeds that of the evergreens. We have to cut down our list by eliminating all the Firs except, perhaps, the Scotch Pine-tree, all the Thujas, Aucubas, Laurels, and other broad-leaved species, till we have only such as the Holly, Yew, Ivy, Juniper, Privet, Gorse and Broom, Butcher's Broom, and a few others left. Put all these together, and see how poor a show they make. Here is a fact which at once sets us thinking. Why are the bulk of our evergreens importations? Why have we hardly a single native species with broad, flat leaves? Why are our indigenous evergreens nearly always provided with needle-shaped leaves, as the aborted Gorse, the Juniper, the Yew, and the Pine; or provided with spines, like the Butcher's Broom and the Holly?

Note, again, that none of our genuine English evergreens are provided with brilliant or conspicuous blossoms. Why is that? Place the Holly and Yew beside the Crab and Wild Rose, put the Juniper, Fir, or Ivy by the side of the Guelder Rose, the Bird Cherry, or the Hawthorn, and observe how noteworthy is the contrast. I grant that the Gorse makes a brave show even in mid-winter, and is capable of making a famous field of cloth of gold in the summer, where it is kept browsed by rabbits and sheep; but the Broom and Gorse are not genuine evergreens. The Privet, perhaps, makes the best display, and the evergreen Daphne (D. Laureola), with its yellowish-green blooms, gives out an equally rich perfume; but after all, what a poor show they make.

We observe, again, that the foliage of evergreens is almost always extremely sombre, and that with the rarest exceptions they supply us with no rich hues, even in decay. There are no autumn tints to evergreens, and seldom are there any soft hues in spring.

Once more I may call attention to the fruit which adorns many evergreens, both native and foreign. The scarlet berry is the favourite form assumed. We have it in the Aucuba and Laurel, the Euonymus—several foreign species of which are evergreen, and thrive well in our shrubberies—the Butcher's Broom, the Yew, and others. In the Ivy, Juniper, and a few other evergreens, the fruit is purple or blackish. Here, then, are a few of the most noteworthy facts. They show us that evergreens are roughly marked off from deciduous trees by the persistent foliage, the sombre hue of the leaves, the general predominance of needle-like foliage in the native species, and the presence of red and dark-coloured fruits, chiefly inedible.

We have now to ask, To what do these curious facts point? How are they to be accounted for? They are too striking not to arrest attention and demand an explanation. We look, therefore, in the first place, to the question of age. What is the testimony of the rocks? What do we learn from a study of the climatic changes which the earth has undergone? I think it is quite certain that the earliest plants were evergreen. The oldest trees of any note, those at least which predominate in the Carboniferous Era, resemble our Pines and Fir-trees. The climate of England has greatly changed since then, and the vegetation has changed with it. If, however, we examine those lands which still possess a very warm and equable climate, and are not subject to periods of intense cold, we find that they have a much larger percentage of evergreens than our flora can produce.

We see, further, that the evergreens abroad are possessed of leaves as large as those which our most robust deciduous trees produce. Now, everyone knows the risks which foreign evergreens run in our climate, by reason of their heavy foliage. Given a fall of snow of some hours' duration, and the trees which have leaves are weighted down and ruined, while those whose branches are bare continue unharmed. We therefore see how wonderfully Nature adapts her offspring to the vicissitudes of life. In England, where snow falls frequently and remains long, the few evergreens we have possess pointed leaves, which pierce the snow-flakes, and offer little surface for their lodgment. Am I told that the Ivy has broad leaves? I reply it is true, but the Ivy in nature climbs around the trunk of a stalwart Ash or Oak, and rarely exposes a flat surface to the snow. Where it does, as when it grows on a wall, or rambles over a building, it seems to rejoice in the consciousness that the everlasting arms are underneath, and no evil can ensue.

These facts throw a new light on the Holly-tree. We have heard much about the prickles and the donkey. There may be truth in the theory; but I think no one can examine our native Ulex in the light of the facts I have been adducing, without feeling that the sharp-pointed and carefully-channelled leaves are a splendid provision against the snow and ice-cold rain of winter. How would it fare at this untimely season of the year if it had the leaves of the Sycamore, Lime, Chestnut, or Laurel?

Thus we learn that evergreens are more frequent in equable climates, and when they persist in these colder zones, they have to be specially equipped to withstand the cold and snow. This they do in various ways. First we have the sharp needles of the Fir, Juniper, Yew, and the pointed leaves of Holly. Next we find that the leaves are very thick and fleshy, in this respect differing widely from nearly all the deciduous trees. The leathery foliage of Laurel, Aucuba, Holly, and other evergreens, is undoubtedly intended to aid the functions of life during the winter season. Further, many of the trees and shrubs are provided with the power to yield a special gum, resin, juice, or other product, which is not found in deciduous trees, unless they are of related orders. The study of exceptions, such as the Larch, is of peculiar interest in such a connection as this.

There remains another fact of great significance. Many ladies and gardeners, whose duty it is to dress the tables with cut flowers, have observed that if evergreens are blended with blossoms, the latter soon droop and fail. Let us put some Daffodils, for example, in a vase, and treat them carefully, and they will last for days. But put a similar bunch of blossoms into another vase with Ivy, Laurel, or other evergreens, and they are very quickly over. Now why is this? The answer is that, almost without exception, evergreens are poisonous. It may seem strange at first sight that there should be any marked difference in this respect between plants whose leaves fall in autumn, and those which retain their foliage all the winter. But a little thought will show us the need for some such protection if the evergreens are not to be swiftly exterminated. Cattle browse in a field where for the present they can get an honest living. Presently snow begins to fall. Everything is covered; and the only green thing anywhere to be seen is the Juniper, Yew or Holly. At once the cattle rush for these; but they soon learn that it is at the peril of their lives they browse on the fleshy leaves. It is hard on the cattle doubtless, but the trees have to live as well as they. I venture to think that the dark green foliage, almost amounting in the winter-time to an appearance of blackness by contrast with the snow, is a colour signal to warn the cattle against the danger of feeding on evergreens. The Holly and Privet, the Juniper and Yew, seem to say, "Beware how you approach us too closely, for there is death in the pot." Rarely, unless pressed beyond measure, will cattle touch the foliage which thus lifts its warning voice, and so tree and cattle alike escape destruction.

In this brief study I have left many important points unnoticed. It was my wish to attract attention to an interesting and fruitful subject of research, rather than attempt an exhaustive exposition. I have probably adduced sufficient facts to suggest along what line we must travel if we are to obtain a reliable clue to the rationale of the evergreen. *A Sussex Naturalist.*

ORCHID NOTES AND GLEANINGS.

STANHOPEA LANGLASSEANA.

FROM a letter of M. Ed. André, who knows the country well, and after a careful perusal of Langlasse's letters, I find there was a slight error in the place I mentioned to Professor Cogniaux as the habitat of *Stanhopea Langlasseana*, described in your issue of Dec. 14. This plant was not gathered near Altaquezo in the valley of Rio Mira, but near Altaquer, on a small river called first Rio Cuaiquez and lower down Rio Cuiza, an affluent of the Rio Mira (altitude 1,700 m.). It is, however, not far from the other locality, and quite in the same region; near also Armada, where M. André discovered *Anthurium Andreanum*. M. Micheli, Geneva.

ODONTOGLOSSUM CIRROSUM KLABOCHORUM.

It is easy to recall the interest which was taken in *Odontoglossum cirrosum* when that fine species from the Andes of Ecuador was successfully forwarded to England by the brothers Klaboch in 1875; and on its flowering in the following year the illustration in the *Gardeners' Chronicle* conveyed an idea of the

flowers to those who were desirous of learning its appearance. Its elegant sprays of white flowers spotted with red-brown caused it to become a general favourite, and for some years it was frequently seen in quantity; of late years, however, it seems to have become less plentiful.

O. cirrosum has its peculiarities, which render it more satisfactory in some years than others, or in some gardens than in others. Frequently the plants send up flower-spikes at the end of the summer and which slowly elongate, but do not produce flowers for several months, and then perhaps only sparsely. At other times their flower-spikes branch and bear flowers quickly, and especially in the late spring months. The finest type of the species was distinguished as *O. cirrosum Klabochorum*, and an inflorescence has been sent by M. Frantz de Laet, of Contich, Belgium, who calls attention to the foliaceous bracts at the bases of some of the flowers. This character is not uncommon in the species, especially when the flowers have been delayed as before mentioned. The long segments of the flowers with their graceful, elongated tips extend four inches and a half from tip to tip. The sepals and petals are white, handsomely blotched with dark purplish-red. The lip is white, with red lines on the side lobes, and some red spots on the narrow front lobe.

PHALÆNOPSIS IN LONDON.

While many of the most experienced cultivators of Orchids in highly favoured parts of the country never succeed in thoroughly mastering *Phalænopsis* culture sufficient to obtain satisfactory results, small lots of them are to be found even in towns in the most vigorous health. In the gardens of W. Shuter, Esq., Belsize Grove, London (gr., Mr. Armstrong), we recently saw a number of plants of *Phalænopsis* in fine health, and which had been growing there for many years in an ordinary plant-house having an intermediate temperature. Some of them were in flower, although the London fogs work the greatest mischief by destroying such of the advanced buds or open flowers which may be on them at the time. The plants, however, do not seem to be damaged at all by the fogs. The species represented were *P. Schilleriana*, *P. Aphrodite* or *amabilis*, *P. amabilis*, known in gardens as *P. grandiflora*, and *P. Cornu-cervi*. With regard to these *Phalænopsis*, Mr. Armstrong says that when he first came to the gardens a good many years ago, the *Phalænopsis* were badly affected by "spot," or disease, and that they have gradually been grown out of it, so that for several years past no trace of "spot" has appeared. This is in opposition to the opinion of many experts that once "spot" takes an Orchid it is not to be eradicated. They do not become large specimens, but always keep healthy and flower well. Mr. Armstrong modestly attributes the good condition of the plants to his having been fortunate in finding a position that suited them; moreover, the temperature is very evenly maintained at all times. Several *Saccolabium giganteum* and other of the distichous-leaved Indian Orchids were flowering and in fine health.

PLANT PORTRAITS.

CATTLEYA PECKAVIENSIS ×, *Wiener Illustrierte Garten Zeitung*, December.

ERICA CHAMISSONIS, Klotzsch, *Wiener Illustrierte Garten Zeitung*, December.

HEMANTHUS DIADEMA, *Revue de l'Horticulture Belge*, January.

NEMESIA STRUMOSA, *Revue Horticole*, January 1.

PRINUS PSEUDOCERASTUS WATERERI and *P. SERRULATA*, *Garten Flora*, t. 149, January.

A GARDEN AT NAPLES.

I THINK that of all Europeans, Neapolitans are the most privileged, as far as gardening is concerned. Mild winters, no extreme heat in summer, and a moderate number of rainy days during the year, allow a large number of Palms and Ferns to be cultivated in the open, while a good many northern plants are also easily grown.

My garden, situated in the centre of the city, contains some remarkable specimens, the description of which may be of some interest to lovers of gardening. Amongst the Palms there are two *Washingtonia robusta*, 50 feet high, and about thirty years old; *Washingtonia filifera* (see fig. 10) is represented by a specimen about 32 feet high. A *Phoenix leonensis*, about twenty years old, has a diameter of 30 ft.

A remarkable Fern is *Balanium antarecticum*, also grown all the year round in the open, like the above-mentioned Palms. Its stem is about 14 feet high, and the leaves form a splendid crown about 10 feet in diameter. Another much-admired Fern is *Cibotium spectabile*, a fine specimen, some leaves of which are 12 feet long. This Fern, however, has to be kept in the greenhouse during the winter.

Among the trees growing in my garden I must mention a *Magnolia grandiflora* 65 feet high, which when flowering is all covered with splendid white blooms, the fragrance of which is so strong that I have to keep the windows closed on the front of my house before which the *Magnolia* stands. This tree, as well as *Arancaria Bidwilli* and *ex-celsa* and *Camphora officinalis* give a fine effect in the garden, but are frequent in Neapolitan gardens. A large summer-house of mine is wholly covered with one single plant of *Wistaria chinensis*, which is about 480 ft. in span. When blooming it is a splendid sight, and is the admiration of all who see it. More than a hundred thousand mauve racemes cover the summer-house, and the fragrance is delicious.

As regards flowers, there is scarcely a day without blooms opening throughout the year. Now Roses, Camellias, and a few Violets are flowering in the open, as well as Carnations and Daffodils. Geo. A. Pfister, Naples.

NOTES FROM ISLEWORTH, 1901.

NEW PLANTS, or those which have come under my observation for the first time during the past year are:—

Hippeastrum Kromeri, Worsley.—This is a new species fully described in another issue. It carries two flowers, individually resembling *H. Johnsoni*, and has remarkably fulvous foliage.

Hippeastrum psittarinum var.—I recently received a very fine form of this old species, which has also remarkably fulvous foliage. These two individuals, indeed, are the most remarkable in this respect of any members of the genus I have seen. This fulvous appearance, however, is dependent in some measure on the way the plants are cultivated.

Hippeastrum correiense var.—Between the true epiphytal *H. correiense* and the terrestrial *H. stylosum* there exists a number of intermediate forms, presenting difficulties in nomenclature. The same old difficulty which reappears whenever an attempt is made to reduce a mass of individuals into ranks, orders, and degrees.

During the past year I have flowered several hundred bulbs of *H. stylosum*, and noted the numerous slight gradations towards the type of *H. correiense*. Also several Organ Mountain forms near *correiense*, but grading off

towards stylosium. One of these in particular was nearly intermediate between the two. It had a pair of compact flowers, and glaucous, blunt foliage.

Hemantus species from the Congo.—One of the events of the year was the exhibition before the Royal Horticultural Society by Messrs. Linden of several splendid forms of *Hemantus* (see Supplement, August 10, 1901). Not having thus far had any opportunity of critically examining these plants or their fruit, I can only say of them that, as garden plants, they mark an advance upon anything in this genus I

H. J. Elwes I had the pleasure of seeing a splendid collection of these plants, and especially admired those named "Miss Willmott," "Lady Dorrington," "Ellioti" vars., some dwarf *N. sarniensis*, and a very beautiful unnamed silvery-pink form, with very wide segments.

NEW PLANTS RAISED AT ISLEWORTH, FLOWERING FOR THE FIRST TIME IN 1901:—

Hippeastrum, Hort., "Rurik," dark red.

Canna, Hort., "G. B. Mallett," a new break in this section, the majority of the flowers being pollipetalous and unisexual.

THE FOLLOWING PLANTS HAVE NOT FLOWERED IN MY GARDEN THIS YEAR:—

Stricklandia euerosioides (figured in the *Gardeners' Chronicle*, October 5, 1901, p. 263).

Cyrtanthus angustifolius.—A very old plant, although but rarely seen of recent years; it is worthy of a place in every garden.

Crinum Van Tubergen (Lynch).—This shows an alliance with *C. scabrum*, and it seems probable that it is of garden origin, possibly dating back to Herbert's time.

Marica, species Petropolis.—This is a very charming plant, raised from seed, I gathered near Petropolis. It is in alliance with *M. cœrulea* (Saubert), and has a remarkably deflexed scape.

Cereus MacDonaldis pallidus.—A very large, scentless, night-flowering plant of great beauty, without the dark outer segments of the type.

Eremurus Elwesianus.—New to my garden, and a great acquisition; it shows off very well against a background of Bamboo. In the evening only is it fragrant.

Pelargonium "Californic".—This is a dwarf double orange, much resembling Raspail, except in its dwarf habit and dazzling colour.

Pelargonium "Rapkin's Glory".—This is an improvement of Chas. Turner, lighter in colour, but finer in every other respect.

Aretotis breviseapa.—I was very pleased with this annual, and consider it a grand bedding-plant for July and August. Its dazzling orange-and-black flowers open very early and close about 3 P.M.

Hippeastrum stylosum var. nudum.—Among several hundred flowers of the species, some fifteen showed a variety which I thought worthy of record. The filaments were remarkably exerted, far beyond what is usual, even in this species, and the stamens spread out as in *H. ealyptatum*.

Hemantus sanguineus (Jacquin).—This can hardly be called a new plant, yet it has been so completely lost sight of that I think it must be new to this generation of gardeners. It flowered with me early this autumn in the open at the base of a heated wall. It possesses more historical than horticultural interest, from which point of view it is in no way superior to the common *H. tigrinus*.

Hidalgoa Werklit.—This charming climber has obtained a reputation for being a shy bloomer. With me it has belied this, having grown to a large size and flowered in one year from a very minute cutting. It grows quickest and best on a wall outside, with full sun exposure, but is cut down by a sharp frost. The flowers are fine for cutting. It is eminently suited for the pillars and walls of a Succulent-house, and is a very clean plant.

Crinum yuccaeoides (Herbert).—A small-growing species of some beauty. Not much removed from *C. Sanderianum*.

Cactus Hort., "Isabelle Watson."—In this brilliant flower the intense red of the outer segments is heightened by a dazzling blue colour suffusing the inner segments.

HARDINESS OF SOME EXOTICS.

Brodieas (Tritecias) from Uruguay.—*B. aurea* has proved hardy for some few years, and has ripened seeds in the open. It still makes a great effort to flower early in January, but last spring it flowered again in season with *B. uniflora*, and will probably in a few years accommodate itself to our seasons. A flower which opened on January 2 was covered with snow, exposed to 15° of air frost, and yet re-opened practically uninjured a few days



FIG. 10.—A NEAPOLITAN GARDEN, WITH WASHINGTONIA FILIFERA THIRTY-TWO FEET HIGH, THE TWO BEING CALLED "THE TWINS," IN THE BACKGROUND A LARGE MAGNOLIA TREE. (SEE P. 38.)

have previously seen. The habit is that of *H. Lindenii*; the size of the flowers and the various shades of red mark an improvement on that species such as many garden plants show when compared with the original importations.

Some of these were named "Fascinator," "mirabilis," "Diadema" (deep red), and "Queen Alexandra" (pink).

Such mixed nomenclature is open to objection. The first three names would suggest three distinct species, and the last name a garden hybrid.

Nerines, garden forms.—In the garden of Mr.

Tomato, Hort., a cross between "Wonder of Italy" (a many-fruited form raised by Sñ. Herb. of Naples) and one of my own garden forms. In this cross the character of each parent is equipoised. Some bunches of ripe fruit were shown before the Royal Horticultural Society's Scientific Committee.

Tropæolum Lobbi, hybrid.—This hybrid was raised fortuitously between *Lobbi* and garden bedding forms. As they only came into flower in the middle of September, their true merit cannot be ascertained till next summer, but they promise to be useful garden plants.

afterwards. I think this must stamp the species as being hardy in suitable soils.

B. Sellowiana, which may prove to be a valuable garden plant, follows the same seasons as *B. aurea*; but I am not so convinced of its hardiness, although it has lived through one winter outside.

Spathacea bicolor.—This has proved hardy for the last two or three winters, and flowered in the open May 8. The flower-scape pushes up for 18 inches inside the old sheathing leaf, and is thus protected from frost until the very day the flowers expand. The bulbs are very proliferous, and like a dry sunny place. The flowers are sweetly scented for some hours after expansion. It ripened seed in the open.

THE FOLLOWING PLANTS HAVE PROVED HARDY AT ISLEWORTH AS TESTED:—

| | |
|---|----------|
| Watsonias, three species flowering end July ... | 4 years. |
| Cypella platensis, flowering freely ... | 1 year. |
| Chlidanthus Ehrenbergi ... | 1 year. |
| Zephyranthes gracilifolia (early October) ... | 3 years. |
| Gymnatrix latifolia ... | 3 years. |

SEEDS.

As the descriptions of the fruit and seeds of so many exotics have been copied by one writer from another, and errors have thus been perpetuated which original investigation would have corrected, I have allowed certain plants to seed simply to make comparison with the descriptions in books of reference. While thus noting some discrepancies, other interesting observations have been made.

Hymenocallis tubiflora.—During recent years this species has been imported on many occasions, and it seems now to be well distributed in our stoves. It always carries a number of ovules in each ovary. One specimen recently bore (in one umbel) 105 ovules in five ovaries. These were not selected ovaries chosen because of their proliferousness, but were the five fruits carried on the one umbel, and may therefore be taken as representing an average for the individual parent. This shows an average of twenty-one ovules, and one ovary carried as many as twenty-five.

Thinking this worthy of record, I sent the specimen to Kew, and was told that such proliferousness was by no means unusual in this species.

Surely, under these circumstances, it is time the generic description of *Hymenocallis* should be corrected. For it is no longer possible to attribute to this genus the maximum number of "a pair" of ovules in each cell, in view of the facts above stated.

Hymenocallis Moritziana.—I think this is a good species. I have flowered it from seed in 3½ years, and it came quite true to type. This species is always described as indigenous to the neighbourhood of Caracas; but this is an error. In the *Notes on the Distribution of the Amaryllidaceæ* (Wesley, 94), I pointed out the locality of this plant, but I did not then state that the late Dr. Ernst, Professor of Natural History at the University of Caracas, who had personally explored the neighbourhood over and over again, assured me that this species could not be found within some days' journey of the capital, and that he could find no record of its ever having been gathered there. My own visit to Caracas was limited to one month, during which I searched the same district daily, with the result of confirming his statement.

Acotyledonous Germination in Crinums.—As I am preparing a paper on this head, I will merely state here that the radical process issuing from the seed of (at least) some *Crinums*, cannot, in my opinion, be classed as a cotyledon. It is a process terminated by a

bulb or bud, and to include such under the term cotyledon would be to expand, out of all recognition, the definition of this term. I do not say how far this theory of acotyledonous germination in the Amaryllidaceæ may be pushed, that is a matter for prolonged investigation; the object of this note is merely to record that in my view the species *C. Moorei*, *C. giganteum*, *C. Yemense*, and *C. Yuccacoides* come under this head.

Tomato Seedling, Variegation in.—Not infrequently in a batch of seedlings several will show variegation. This spring one seed-pod gave quite 80 per cent. of strongly variegated seedlings. When these young plants had four to six leaves each, they bid fair to grow into decorative plants, but from this point the variegation died out absolutely. Some persons account for this by asserting that such seedlings were weak and lacked colouring-matter, were in fact anæmic, and that sunny weather would cure them. My own observations show that the variegation appears in the strongest seedlings equally with the weaker ones, and I think it is more probable that one of the progenitors of our garden Tomato had, either in itself or collaterally, variegated foliage. Can any of your readers well versed in the Solanaceæ throw any light upon this?

Spathacea bicolor.—The seeds are flat, winged, and yellowish in colour; about sixty in a fruit.

Hemantthus carneus.—The fruit is a transparent, oval, green berry, inclosing the darker-looking embryo, the coloration and transparency being that of an unripe Muscat Grape. (Note. Germination of seed not tested.)

VARIOUS PLANT NOTES.

Romuleas.—It appears that some confusion exists in this genus. The Cape species seem very refractory under cultivation in pots, and are not hardy in the London districts. The species of the Mediterranean are of course much hardier, although not nearly so beautiful.

R. Bulbocodium (var. *bicolor*?).—This form has a yellow base, and is taken in Mr. Nicholson's *Dictionary of Gardening* as the type. However, all the coloured figures I have seen of the type show a white base and longer segments.

R. Linnaesii seems to be another variety of this species. It has a rather larger, nearly self-blue flower.

R. purpurascens is a better plant than any *Bulbocodium* form. It has self-coloured flowers of a brilliant purple. The style is very short, and the stigma remains hidden among the anthers.

Hippeastrum Hybrids.—I thought that those shown by Capt. Holford at the R.H.S. marked an advance, both in colours and in robustness on any previous exhibit I have seen. All that remains to be done in this section is to reintroduce more variety in habit.

Cactus "Urania".—I think that it is quite inadmissible to found genera on leaves only, as has recently been attempted in this order, and that the old name, "*Cactus*," should be reinstated; and the recent divisions into *Cereus*, *Phyllocactus*, &c., reduced to sub-genera. The form "*Urania*" has been in my collection for some years, and is almost certainly of garden origin. Hence it probably exists elsewhere under another name. However, as I think it is the most beautiful form I have ever seen, it was impossible to leave it without a name for an indefinite number of years. This is a day-flowering white *Cactus*, floriferous, and possessing an almost intoxicating fragrance.

Narcissus biflorus.—This species does not flower freely in all soils, and has been superseded in many gardens by more showy forms. In sweetness it surpasses all others. If well done, it will often produce three flowers to the scape. I gathered one specimen last spring with four flowers.

Cinerarias Bedded-out.—One feature of the year in my garden was a bed of these plants. Seed should be sown early in January, pricked out into boxes, and planted out about the first week in May. It is absolutely essential to select a damp and shady position. Early in September the plants will come into bloom, and last until cut down by frost. The later ones may safely be lifted towards the end of October, and potted-up for inside work. For this purpose choose those which have not yet expanded their blooms, and lift them on a damp or foggy day. Of course, such plants can never rival those grown on in pots from the start, yet very fair plants may be grown in this way at about one quarter the expense of the recognised method, in labour, fumigation, &c.

Gastronema sanguineum.—This plant has been a worry to many gardeners. It should never be grown in a pot, but either planted out, or in wide pans 4 inches deep. It does not appear to flower well outside, but the bulbs grow very fast in full sun during the summer, and should be lifted towards the end of September. In winter a night temperature of 45° is sufficient if kept dry.

Summer-flowering Cape and Japanese Amaryllids.—The past summer has not proved favourable for these plants in the open. My *Lycoris* only produced just short of 100 flower-scapes, in place of nearly double that number. *Amaryllis* flowered sparingly, and the *Brunsvigias* and *Cape Crinums* were a complete failure. A. Worsley, Isleworth.

A REVIEW OF THE SEED SEASON.

EARLY Peas, being scarce, are phenomenally high in price this season, the supply, being unequal to the demand, necessitating the probable curtailment of orders. The serious shortage in the harvest is owing to the persistent drought experienced in the seed growing districts during May, June, and July, and to the heat and dryness of the atmosphere when the blossoms were setting their pods, so that the flowers dried up before they could reach the stage of pod forming. It can be readily understood that the yield of seed fell greatly below the average; 2 and 3 acres of a particular sort yielding not more than would a half acre under ordinary favourable conditions.

Early Peas for seed are always grown on light land to preserve their precocity, and it was the light lands which suffered so severely from the drought. To sow early Peas on heavy land is to throw the stock back in point of earliness, and also to increase the height of the growth. Early Peas rapidly deteriorate in regard to these particulars when grown on retarding land. Many late wrinkled Peas are also scarce, and high in price. Three quarters (24 bushels) per acre is regarded as a good average yield of seed, but probably in no single case has the average been reached this season.

Some new Peas show a tendency to improve under cultivation, and perhaps more particularly some of the varieties bearing the name of Laxton. *Gradus* is a case in point, and it is found to be showing improvement as a cropping Pea—as a seed-merchant said the other day, "*Gradus* is working up a constitution of its own." This might be said of all the

crosses made by Laxton; the main aim has been to produce dark green pods. Whether rightly or wrongly, superior flavour is associated in the minds of many with a deep green pod; and in order to produce the desired colour, probably some amount of breeding in-and-in has had to be resorted to, to secure this end, hence some constitutional debility. Green-podded Peas no doubt have the preference in the estimation of the market dealer. Other Peas than Gradus are doubtless going through the same course of improvement

the spring, which did their share of damage, and they were followed by a visitation of insect pests. The year 1901 was a record year for noxious insects of every kind. They seem to have been carried south and west by the cold north-easterly winds, which prevailed so long during the spring; the Brassica tribe in particular suffered from their attacks. So severely felt were the ravages of vermin in the seed-growing districts of western France, that the caterpillar literally cleared fields of large French Cabbages standing for seed; and it is

and Italy, are record ones, both in regard to quantity and quality.

The supply of Italian Onions, represented by the Tripoli section, though not so abundant, is enough to meet an average demand. The large mild-flavoured Onions, introduced by Deverill and others, seem to be taking the place of the Tripolis to some extent in regard to the particular purposes to which they are put. One of the features regarding the development of the Onion in recent years is the increasing popularity of the Queen type, which may be denominated a glorified Silver Skin. It is now largely grown for pickling purposes, thus superseding the red pickling type. When first the latter was pickled, it was found that one effect of the brine was to impart to the clear silver skin a dull brown appearance, but the brine is now so prepared that the silvery appearance of the skin is retained without disfigurement; the appearance of the Queen is therefore more taking than that of the old pickler, while the quality is also better every way. *Pisum*.

NEW FERNS OF 1901.

BRITISH FERNS.—Despite the great number of distinct types of variations in British Fern species, the year has seen the introduction of some decided novelties and improvements of type, viz., a quite new form of *Osmunda regalis* (Royal Fern). Royal Horticultural Society Awards of Merit were given to two forms of *Scelopendrium vulgare*, viz., *S. v. crispum cristatum fimbriatum* Stansfield, prettily fringed, as well as frilled and tasselled; and *S. v. crispum Drummondiae superba*, described and figured in *Gardeners' Chronicle*, January 4, 1902, p. 5, which indicates a still greater advance in the decorative direction in this species. A very remarkable viviparous form of this species was also exhibited by Mr. Druery at the Scientific Committee, the fronds literally crowded with young plants arising from surface bulbils, the original wild find, *S. v. cristatum viviparum* O'Kelly, bearing them but sparsely.

Finally, mention should not be omitted of *Athyrium f.-f. cristatum fimbriatum*, raised by Mr. Garnett, Bowness, a remarkably slender, finely tasselled form, somewhat on the lines of *A. f.-f. clarissima*, and like that Fern characterised by soral apospory, but on a more marked scale; and further differentiated by the apical form of the same phenomenon, plus the tassels, and all the terminals. The parentage is unfortunately unknown, but as it seems certain that it has not arisen from either of the aposporous *Athyria* in cultivation, it being a chance sporeling, it ranks as the first case of combined soral and apical apospory which has originated under culture. C. T. D.

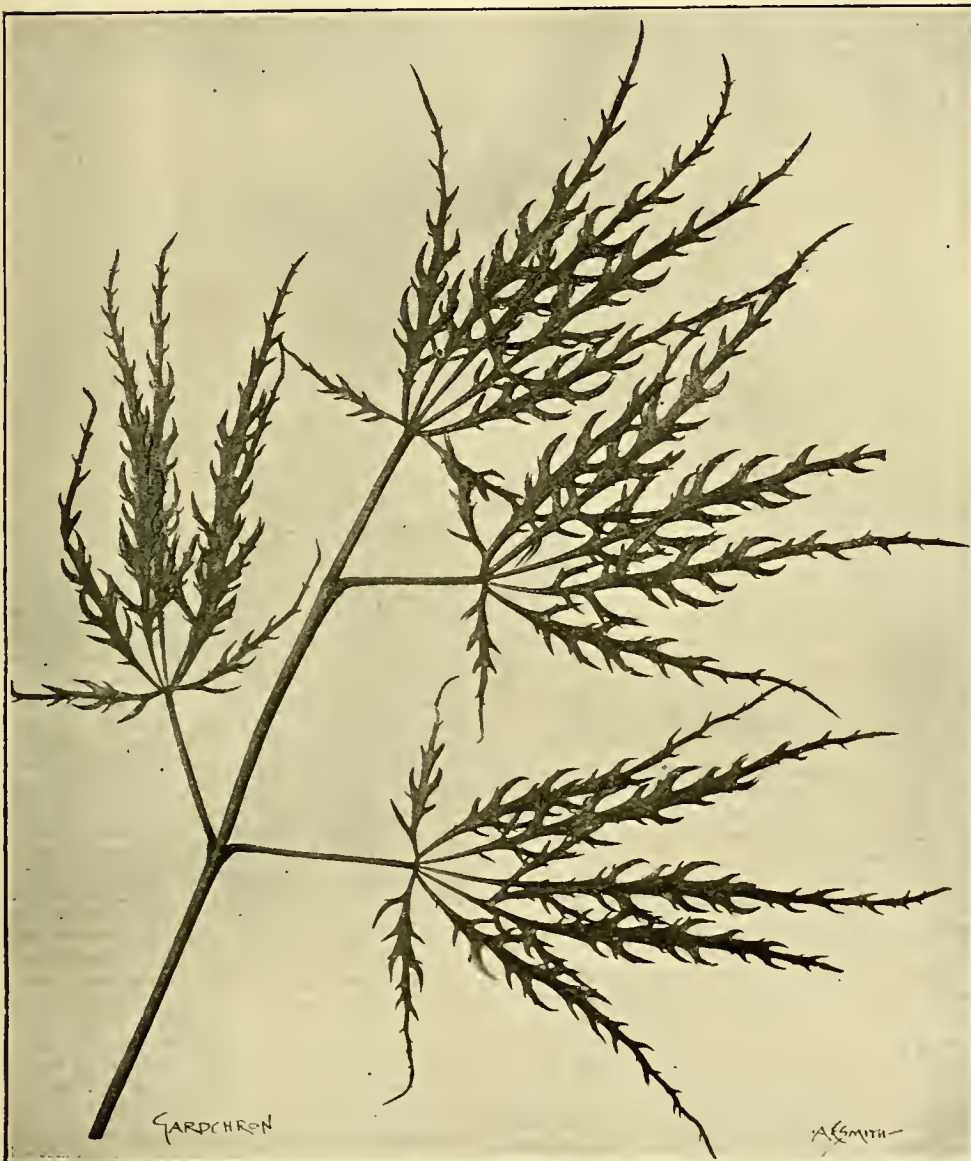


FIG. 11.—LEAVES OF A JAPANESE MAPLE, *ACER POLYMORPHUM* VAR. *DISSECTUM*. (SEE P. 46.)

by cultivation, while some rapidly fall away and are soon lost.

The prices of seeds of Carrots, Beets, and Cabbages, are exceedingly high this season, as they too are very scarce. Parsnip and Parsley were also scarce crops. Some suffered by reason of the dry character of the late summer and autumn of 1900, when owing to the drought many seed plants could not be put out, but had to remain in the seed-beds until quite late in the year. During that time they deteriorated rather than advanced; and then owing to late planting they suffered somewhat from the rigours of the winter, and numbers were destroyed. Then followed late frosts in

recorded that they at one point crossed the Paris and Orleans railway in such numbers, that they actually for a time stopped the progress of one of the trains.

There is therefore a great scarcity of seeds of many of the most useful kinds of culinary vegetables; and the same is true of some of the seed-growing districts of Northern Europe. Onions and Leeks form exceptions to the general scarcity. The Onion glories in hot, dry weather. There is no doubt a reserve of sustaining force in its firm fleshy bulbs, and it sends its roots down deeply into the soil. The crops of Onion-seeds saved in the north of Europe, and particularly in western France

The Week's Work.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Wall Fruit-trees.—As soon as the pruning and training of stone fruits have been completed, the borders, which should be from 3 to 5 feet in width, measured from the base of the wall, should be cleared of all prunings and rubbish, and receive a top-dressing one inch thick of lime rubble or mortar refuse, and be lightly dug over, removing at the same time all suckers by cutting them off close to the root. Early last spring I gave to all the wall-fruit borders a top-dressing of this thickness of old "cob" broken up very finely, which was procured from the cob walls of cottages pulled down at Bicton. Some of the older

garden men implied that it would "burn" the roots, but the healthy foliage and abundant crops of fruit the trees carried last summer, told quite a different tale. This kind of top-dressing is not required yearly, and I should be dubious about advocating its use on very retentive soils, but with a light, sandy soil resting on the old red sand-stone, it is an excellent fertiliser. It must be used with care, and then no ill effects will occur. I plant a single row of Violets at the foot of all the fruit walls, excepting those where Peaches and Apricots are planted, keeping the plant 18 inches distant from the stems of the tree.

The Grape-vine.—Established plants growing on walls may be pruned and put in order. If grown on the spur system the laterals should be cut back to the second or third bud from the base, but if on the extension plan, the growths that have been laid in during summer to take the place of those that bore fruit the past season, should be shortened back to a plump bud, leaving about 4 feet of shoots. If red spider infest the Vines, let the wood be dressed with a mixture of water, soft soap and flowers-of-sulphur. The Vine roots are the better for a yearly top-dressing, removing a layer of soil 3 inches deep, and replacing it with maiden loam and bone-meal—one peck of the latter to 4 bushels of loam. The planting of Vines should be done about the middle of March.

Strawberries.—Where these were not mulched in late autumn, the ground between the plants should be cleared of weeds and dressed with short manure 2 or 3 inches thick, pointing this in with a fork, in March. Some gardeners object to using a fork between the plants, but I consider the plants are benefited, the rain penetrating the soil more readily; and if a mulch of clean Oat-straw be applied when the flower trusses begin to push up, the ground will usually be kept fairly moist until the crop of fruit has been cleared. Plantations made in August last will not need any manure this year.

THE ORCHID HOUSES.

By W. H. BOUND, Gardener to J. COLMAN, Esq., Gattin Park, Reigate.

Odontoglossum-house.—Numerous flower-spikes will now be showing on the plants, and constant observation will be necessary to guard against slugs, which otherwise would soon destroy the labours of a season. The leaves of the Lettuce, or Orange-peel laid between the pots form, I think, the best baits for them; but do not trust to a trap, especially if any good variety is showing bloom, but place the plant on a piece of perforated zinc, and keep the leaves clear of other plants—the spike will then be safe. The flower-spikes that have been out during the recent spell of cold weather should not be allowed to remain on the plant very long, or the plant will suffer in vigour. It is better not to allow a plant to flower if it show any falling off from the preceding year in length of leaf or size of pseudo-bulb, which often occur when the plant has been allowed to carry a strong spike the previous year, which remained on the plant for a long period.

Laelia anceps, and the many fine varieties, such as *L. a. Bull's alba*, *L. a. Hillii*, *L. a. Holidayana*, *L. a. Amesiana*, *L. a. Dawsoni*, *L. a. Williamsii*, *L. a. Schroderiana*, *L. a. Ballantianiana*, *L. a. oculata*, *L. a. Sanderiana*, *L. a. Stella*, *L. a. Chamberlainiana*, are the most conspicuous Orchids in flower during the early months of the new year, and they are worthy of a place in every collection. The temperature of the house during the time they are in flower should not be allowed to descend below 55° at night, nor rise above 63° by day, and some air by the bottom ventilators should be afforded when possible by night and day, in volume according to the state of the outside temperature. Water should be afforded with care at this season, when some of the plants are rapidly making new roots, whilst others are still dormant. Plants that are making

roots require more water than others, but even these should only be afforded water when dry, so that the moisture will dry up quickly; for it is when the materials remain in a wet state for several days after water has been applied, that the newly-made roots suffer so much. Any *Laelia* which requires potting this season should receive attention as soon as signs of root-action are noticed. The compost should consist of very good turfy peat, with most of the fine particles of soil shaken out, and as a surfacing only sphagnum-moss should be used, which is readily removed when sour or worn out. In repotting, I advise the use of pans in preference to baskets, these being neater, and the plants are more easily potted on occasion. The pans should be well drained with clean crocks; dead roots should be removed, as also some of the back pseudo-bulbs, not leaving more than three of them behind the leading one; then, if there are several leads to a plant, they can be put together with the leads facing towards the rim of the pan. Let the peat be inserted firmly among the roots till the pan is filled, keeping the base of the plant on a level with the rim of the pan, and finishing off with several clumps of good heads of sphagnum-moss. Plants which have been potted will require very little water at the roots for some time afterwards, beyond an occasional syringing overhead on bright days.

The Back Pseudo-bulbs of Laelia.—Those which are removed when repotting should be suitably labelled, and hung up in a somewhat dry, light position, potting them when they show signs of growth. A good method of increasing *L. anceps* is to remove any lead and two or three of the pseudo-bulbs which may be growing over the edges of the pan or basket, leaving the back pseudo-bulbs to make new leads, which, if in good health, does not take a long time to accomplish. I have seen a strong lead made the first season, and produce flowers. *Laelia anceps* does not like its roots to be interfered with, so I would not advise repotting being carried out unless the peat is quite worn out. Essential points in the cultivation of *L. anceps* are plenty of strong light and ventilation. The plants should, if possible, be placed in an intermediate-house, and where the blinds can be worked to suit them.

[Mr. Bound desires us to say that it was really once a year, and not once a month, that plants should have their leaves cleansed, as was stated in the Orchid Calendar for last week. We erred, it appears, on the side of cleanliness. Ed.]

PLANTS UNDER GLASS.

By J. C. TALLACK, Gardener to E. MILLER MUNDT, Esq., Shipley Hall, Derby.

Regal and Show Pelargoniums.—These should be potted forthwith if not already done, so that the roots may have ample time to grasp the new soil before the trusses develop. Good turfy loam with a little decayed horse-manure, a sprinkling of bone-meal, and plenty of sand or road-grit suits them well; leaf-mould as an ingredient I do not advise, for it has been held, rightly I think, that this is a main factor in the development of leaf-spot, and since discontinuing its use I have had no further trouble with spot. Pot firmly, and do not afford too much room in the pots for new soil. Return the plants for the present to a light shelf or position near the glass in a house where only sufficient fire-heat is used to keep out frost, and the air is buoyant.

Cannas.—Where early flowers are needed, a batch of Cannas should be potted up, first dividing them into single crowns, unless bulky specimens are desired. Cannas do best in a rich soil, into which a considerable quantity of decayed cow-manure enters, and sand in plenty. Good drainage must be afforded, as they take water abundantly when growing. I prefer to pot at this season into the flowering pots direct, placing them in gentle warmth, and applying no more water than they get from the syringe for the first few weeks.

Asparagus Sprengeri.—As a basket plant, the growth of which will cover with graceful

verdure quite a large space, nothing can equal this plant, which grows faster than any of its class, and the sprays are exceedingly durable. Seedlings raised from last year's crop of seed sown as soon as ripe will now be fit for putting into baskets, and will by next autumn make large plants. Employ a good holding turfy loam and sand in plenty round the roots; lighter soil will do, but it gets exhausted much sooner.

Heaths and Hardwooded Plants.—This is probably the worst part of the year for these plants. The ventilation should be as ample as possible, without permitting sharp draught; and in frosty weather no more fire-heat should be applied than will serve to keep out frost. The sulphur-duster should be at hand for use in case of any mildew appearing among the Heaths. Early flowered plants of *E. hyemalis* should be cut back and placed in a slightly warmer house to break.

General Work.—Camellias in flower and bud should be freely fed with clear liquid-manure; healthy plants revel in this treatment to an extent not so well understood as it should be. Richardias which are producing spathes may also be heavily fed, and receive also ample supplies of water. *Euphorbia (Poinsettia) pulcherrima* will require no more water for the present, as the roots have no work to do, and the stems need ripening. *E. jacquineziflora* may also be allowed less water at the root, but not dried off to anything like the same extent, and it should be kept in the stove. Dutch Hyacinths for flowering just before those planted out should be brought into a cool-house and kept near the glass.

THE KITCHEN GARDEN.

By T. TURTON, Gr. to J. K. D. WINGFIELD DIGBY, Esq., Sherborne Castle, Dorset.

Early Potatos.—In gardens where hot-water pits can be set apart for this crop, forthwith fill them with fresh leaves of Oak, Beech, or Sweet Chestnut, making the bed as firm as possible by tramping it. This date will not be too early if new Potatos are required about Easter. The loamy soil in which Melon plants were grown last year forms an ideal one for Potato culture, and should always be reserved for this purpose. The surface of the leaf-bed should come to within 18 inches of the lights, and on the bed should be placed a layer 6 inches thick of soil. Assuming that the Potato sets have already been started, and are growing in a pit having a temperature of 50°, they will have made strong shoots. Do not intercrop with Radishes, &c., as the Potatos will soon require all the space, and require moulding-up, that is, before the Radishes are fit for consumption. Ashleaf varieties of Potatos had a long reign in gardens. They are, however, now generally superseded by Ringleader and other new early varieties. The sets should be planted from 12 inches to 15 inches from row to row, and 9 inches in the row.

Tomatos.—Plants raised from sowings made in October, which have been standing in large 60-sized pots, should, if they are intended for fruiting in pots, be shifted into 6-inch pots, potting them moderately firmly in a compost consisting of good turfy loam three parts and spent Mushroom-bed dung one part, with charred garden refuse in quantity according to the nature of the loam. Place the plants very close to the glass, in a house having a warmth ranging from 60° to 65°, and 5° to 10° higher than that in which they were grown hitherto. Make a sowing of seed forthwith for raising plants for planting-out in pits at the beginning of March. The back walls of vineries newly planted also offer a suitable place for growing an early crop of Tomatos. A selection of Early Ruby still holds its own here as a variety for an early crop, and Sutton's A1 to succeed it. The seed should be sown in 6-inch pots, in a mixture of loam three parts, leaf-mould one part, and enough silver-sand as will ensure porosity. Place the pots in a temperature of 65° to 75°, and as soon as the

seeds have germinated, remove the seed-pots to a shelf near the glass, so as to keep the seedlings sturdy. When the plants are a few inches high, pot them singly into small 60's, and keep them on a shelf in a forcing-house until they are large enough to be hardened off previously to planting them where they are to be grown.

Cauliflowers.—Plants in frames and hand-lights should be fully exposed in mild weather, and be afforded air, excepting during sharp frosts. This is a sure precaution against "buttoning," and prepares them for planting on warm borders in March. Many gardeners have relinquished autumn-sowing, owing to the uncertainty attached to wintering them under protection, and the possibility of obtaining equally serviceable heads of the variety Early Forcing sown at the present date. Let a sowing be also made of The Pearl, which forms a good succession to the first-named. Sow in boxes, and place in a temperature of 50° to 55°, and at all stages keep the plants near to the glass; when they are 3 inches high, a good batch should be potted singly into 3½-inch pots, heaping up the pots with compost, as recommended for Tomatos, using some of the rougher portions of spent Mushroom-dung for drainage. Plant with a blunt dibber, or what is more expeditious, with the index finger, and make the soil firm in the usual manner; return the plants to a growing temperature until they are established and growing freely, then remove them to a cold pit until the weather is mild enough to risk planting them in the open.

THE FLOWER GARDEN.

By R. DAVIDSON, Gardener to EARL CADOGAN, Culford Hall, Bury St. Edmunds.

Spring flowering bulbs.—In many places border varieties of Narcissus are now shooting through the soil, and when plantations have stood for two or three years, a top-dressing of wood-ashes and sifted loam equal parts, adding to every barrowful of the former 1 peck soot and 3 lb. of artificial plant manure, spreading the whole evenly to the depth of about ½ inch or a little less, will do much to invigorate the bulbs. Plantations made last autumn will not need such treatment, though a sprinkling of fresh soot placed around the clumps or lines will be of some benefit, and also prevent the ravages of slugs. Some of the best varieties are Glory of Leyden, Madame de Graaf, bicolor Madame Plomp, Fred. Moore, bicolor Weardale Perfection, and Apricot, very fine.

Border Carnations, Picotees and Pinks.—Assuming that plantations of the different varieties for cutting purposes were made last September in prepared beds, the plants, with few exceptions, will have begun to grow, rendering it necessary to stir the soil slightly with a hand-fork, taking care not to disturb the roots thereby, maintaining a close watch for wire-worm and the grubs of the cockchafer-moth. Carnations of proved excellence are Goldylocks, Mephisto, Mrs. A. J. Palmer, Mrs. McRae, Much the Miller, The Hunter, Verona, Wild Swan, and Germania, a variety which when well grown, is a beautiful flower. Amongst Pinks, very useful are Albino, Ernest Ladhams, and Lady Falmouth.

Ranunculus.—In warm localities the tubers of Ranunculus may now be planted in deeply-dug, prepared beds, well-manured with leaf-soil or other mild manure. Having dug the beds and made the soil firm, the latter should be shovelled out 4 inches deep and thrown into the alleys, the bottom of the excavated part made level, and the tubers, which resemble birds' claws, should be set claws downwards about 4 inches apart, and be pressed firmly into the soil, scattering some sand over the crowns and covering with fine soil and that which was thrown out. The beds should be covered with fir-boughs or other light material, as a protection against frost, which should not be removed till the end of March.

Biennials.—An inspection made at this date of the beds of the various plants employed in

spring bedding is sure to show some losses, and the present mild weather may induce many to forthwith fill the gaps from the reserve garden, but it would be better to defer doing this till about the middle of next month, when growth usually begins in such plants as Erysimum, Mysis, Silene, Limnanthes, &c. Wherever practicable during intervals of fine weather keep the Dutch-hoe at work amongst all such subjects in the flower garden. The vacant ground at the front of shrubberies which it is intended to plant with sub-tropicals, may be heavily manured and deeply dug; also the unoccupied spaces in the borders of mixed herbaceous wherein Dahlias, Salvias and Marguerites will be planted. In the vicinity of the mansion where neatness is required the paths and terraces should be swept, rolling the paths with a heavy roller and the turf with a lighter one. A sufficient quantity of composts should be stored in the potting-shed for future use, which is better than leaving them out-of-doors till wanted. In bad weather let all necessary repairs of cutting and plant-boxes be made, cleanse seed-pans and pots, and get labels of a variety of sizes made, sorted, and put into bundles in readiness for use.

FRUITS UNDER GLASS.

By JAMES WHYTOCK, Gardener to the DUKE OF BUCKLEUCH, Dalkeith.

Early-forced Fig-trees in Pots.—Following the very excellent instructions already given for the starting of these, it will be necessary to maintain a gentle bottom-heat of 75° to help the proper swelling of the fruit, and a mean atmospheric heat of 60°, 10° to 15° more throughout the day, closing early with sun-heat. When the fruit gets to a certain stage, increase in size is arrested till the setting process is over; and care must now be taken in dull weather not to afford much water at the root, nor keep the foliage constantly wet by syringing it, or the fruit will turn of a yellow tint; and on the other hand, the foliage of the Fig is so liable to become infested by red-spider, that syringing must be performed on every bright day. Afford the soil sufficient water, and let the paths and houses be damped frequently, always using warm water.

Cucumbers.—In order to maintain a supply in mid-winter, the plants must be cropped lightly, and the roots kept at the surface by affording small top-dressings of rich turfy loam, artificial manure, and on the top of all some fresh horse-droppings. The syringing of the plants at this season may only be carried out early in the afternoons of bright days, and when the weather is not very cold. The temperature of the house at night should be 65°, and rather than maintain this with excessive fire-heat, cover the roof with Frigi Domo, or let it drop 5°. The bottom-heat should not exceed 80°; make the most of sun-heat, let the temperature run up between 80° and 90°, and only admit air in small quantity in the forenoon when the day is fine.

Pine-apples.—The division which contained smooth Cayennes, which have been affording ripe fruit for the past two months, being now cleared of fruits, should be filled forthwith with the same variety of fruiting size from the succession pit. The bed having a heated chamber underneath, and tanner's bark as plunging material, some fresh bark should be added to the old and mixed with it, and the pots plunged 2 ft. from centre to centre, and as fruit is not wanted before next November and December, the atmospheric and bottom-heat, and the quantity of water afforded the plants, should for some time to come be such as will conduce to rest. The main lot of smooth Cayennes for the supply of fruit from the present time till June, will require as near as possible 65° at night, 10° or 15° more in the daytime with sun-heat, and a bottom-heat of 90°. The plants should be examined regularly twice a week, and water afforded to those that need it, and to plants with swelling fruit frequent applications of weak manure-water. The paths and wall surfaces should be moistened

several times a day, but not the plants. The division of Queen Pines for affording fruit from next June till the autumn, which since last September have been kept cool, both at top and bottom, and rather dry, should this month get a thorough application of water. The night temperature should range from 60° to 65°, 10° more by day, and a bottom-heat of 90°. After water has once been applied, water may be needed twice a week; a moist atmosphere should be maintained by damping down two or three times a day, but the plants should not be syringed.

Strawberries.—For affording the earliest fruit, plants growing in 5 or 6-inch pots should have been plunged in mild bottom-heat about the beginning of December, in a brick pit sufficiently deep to hold a bed of tree-leaves 2½ in. thick, provided with a flow and return 4-in. pipe for top-heat. This bed will afford a bottom-heat of 70°, and a top-heat of 50° to 55° should be maintained, according to the weather. Those plants which were started at the beginning of December are now beginning to show the flower-trusses, and may be removed to shelves in the Strawberry-house if one exists; if not, then to a shelf near the glass in a pinery, a vinery, or Peach-house, that has been started. Whilst in flower, and until the fruit has set, employ a night temperature of 55° to 60°, with a constant circulation of air; 10° to 15° higher by day with sun. When the fruit is set, remove the smaller fruits, reserving only a few of the best, and place the plants in a mean temperature of 70°. If pot Strawberries are properly treated and fed from the first, there is little trouble with red-spider or mildew. Before starting them lightly stir the surface of the soil, and apply a light dressing—¼ oz. of "veltha," mixed in as much sand on the surface as a prevention of mildew; then, when the fruit is set, apply a sprinkling of Thomson's, or other good plant-food. See that the plants do not suffer lack of water, and frequently apply soot-water. In bright weather syringe the plants twice daily, and keep a moist growing atmosphere. The two best varieties for the earliest crop are Stevens' Wonder and John Ruskin.

PUBLICATIONS RECEIVED.—*The Gentlewoman*, acceptable in every household.—*Nature Notes*, January. —*Annual Report for 1900 from the Botanic Station, Grenada*, by W. E. Broadway, Curator. "An interesting feature in connection with the work of the Botanic Station during 1900 was the establishment of seven experimental Cacao plots in various parts of the Island, under the control of the Curator and other officers of the Imperial Department of Agriculture. The Report is, on the whole, of a favourable character." An interesting note is that the non-climbing variety of Black Pepper bore a crop of fruit again. The plant is more productive in Grenada than are those which climb trees.—From the Imperial Department of Agriculture for the West Indies, we have received the following numbers of the Pamphlet Series: No. 11.—*Journal of the Department of Agriculture of Western Australia*, November, 1901. Includes many notes and papers on: The Insectivorous Birds of Western Australia, by Robert Hall; Woodiness of the Passiflora Fruit, by A. Despeissis; Noxious Weed (*Hemeria collina*), &c.—*Annales Agronomiques*, December 25.—*Boletín del Instituto Físico-Geográfico de Costa Rica*, Nos. 10 and 11.—*Syllabus of the Dundee Horticultural Association for the session 1902*, and *Annual Report*.—*Annual Report on the Gardens of his Highness Maharaja Fateh Singhji Bahadur, G.C.S.I. of Udaipur, Mewar*. From the year 1898-99 to 1900-01. The former year was fairly good for the agricultural and horticultural works, although the rains were much below the average. The year 1899-1900 was the worst ever seen in Mewar. The famine of 1888 was nothing in comparison to the present one; the gardens suffered in many places, thousands of plants died, but Mango-trees stood the drought well.—From the Imperial Department of Agriculture for the West Indies:—Pamphlet Series No. 11.—*Bulletin of the Botanical Department, Jamaica*. Edited by William Fawcett. November and December, 1901. Contents: Historical Notes, by the Editor and W. Harris, F.L.S. IV. 'The Mango. Nathaniel Wilson, by F. Wilson, &c.—*Sunset: A Magazine of the Border*. December, 1901. Contents: Garden of the Willow-pattern Plate, by Irene Connell; Carnations by the Sea, by Ednah Robinson, &c. This magazine is published monthly by the Passenger Department of the Southern Pacific Company, 4, Montgomery Street, San Francisco, California.—*Detectus Seminum et Fructum*. Hortus Botanicus Bonariensis, collectorem et pro mutua permutanda offeruntur (List of Fruit and Seeds for exchange from the Botanic Garden, Buenos Ayres. Director, Señor Thays).

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.

THURSDAY, JAN. 23. { Annual General Meeting of
Gardeners' Royal Benevolent
Institution at Simpson's,
Strand.

SALES FOR THE WEEK.

MONDAY, JAN. 20.—
Perennials, &c., by Protheroe & Morris, at 12.
WEDNESDAY, JAN. 22.—
Fruit Trees at Cliffe, near Rochester, by Protheroe & Morris.—Plants, &c., at Stevens' Rooms, at 12.30.
Orchids, Leeds, John Cowan.—Azaleas, &c., Protheroe & Morris, at 12.
FRIDAY, JAN. 24.—
Orchids, Perennials, &c., by Protheroe & Morris, at 12.30.

TENDER.

Maintenance of Recreation Grounds in Marylebone. Engineer, Town Hall, Marylebone Lane.

(For further particulars see Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick —37°.

ACTUAL TEMPERATURES:—

LONDON.—January 15 (6 P.M.): Max. 40°; Min. 29°.

January 16.—W. wind; dull; milder.

PROVINCES.—January 15 (6 P.M.): Max. 48°, N.E. Scotland; Min. 36°, E. England.

A Home for the R.H.S. THE approaching annual meeting of the Royal Horticultural Society will no doubt induce many of the Fellows to enquire what, if any, steps have been taken to secure adequate accommodation for the Society in London. Mr. BURBIDGE's letter in our last issue we are sure gives utterance to what many beside himself are feeling. At the meeting called to consider the matter in April last, the proposal to purchase a large area of land at some distance from London for the purpose of forming a garden was negated by a very large and very emphatic majority. Although the proposal to secure a hall was not formally before that meeting, yet there could be no sort of doubt what the wishes and aspirations of the Fellows present were, and substantial offers of assistance were then and there made. The Fellows have therefore a right, at the forthcoming meeting, to know what has been done to give effect to their wishes, and, though we are not authorised to make any such declaration, we hope that they will not be altogether disappointed. Several sites have, we know, been visited by a committee elected by the Royal Horticultural Society, and presided over by Baron SCHRODER, and their capabilities discussed. All were very costly, some so much so as to be prohibitive. In one case, however, the conditions, if not fully satisfactory, are more favourable, so that we shall probably hear more about it at the ensuing meeting.

The Society is in a remarkably prosperous condition, and under the judicious management of the Council, and its indefatigable Secretary, a considerable reserve fund has been accumulated. To those of us who remember keenly, the period of financial disaster, the present state of affairs is nothing short of wonderful. The present time is therefore as propitious as any time

is likely to be, and every effort should be made to avail ourselves of it by the erection of suitable premises, which, if costly, will be all the more valuable as an asset, and will obviate the necessity of hiring the Drill Hall and the offices of the Society. Large financial help from outside must be forthcoming, but considering that the Society now numbers some 6,000 Fellows, mostly recruited from the well-to-do classes, we cannot doubt that if a full and straightforward statement of the case were submitted to the Fellows, and an appeal made for help, that the response would be favourable.

In the meantime a courteous communication has been received from the Royal Botanic, inviting the Royal Horticultural Society to hold some or all their shows in the Regent's Park Gardens, and offering every facility for the purpose. There is no doubt the conservatories and exhibition grounds are very suitable for the purpose, but they are out of the way, and the policy followed of late years by the Botanic is not such as commends itself either to botanists or horticulturists.

In reply, the Council of the Royal Horticultural Society have, we believe, stated that they are unable at present to accept the offer of the sister Society, and that until the arrangements for celebrating the Centenary are decided upon, the Royal Horticultural Society is unable to entertain the idea of a change. Moreover, in view of the great advantages which have accrued from moving to Westminster, the Council would have to be very decidedly convinced that such a removal of site as now proposed would not endanger the recently revived prosperity of the Royal Horticultural Society. No doubt the idea of a complete amalgamation between the two Societies would not, under existing circumstances, be acceptable, nor would the Fellows care at their own expense to save the Royal Botanic Society from the cost and trouble of maintaining its own shows.

Another point has been raised by the recent action of certain members of the Fruit Committee, in urging the Society to obtain by hire or purchase a small area of three or four acres just outside London, where trials can be conducted more satisfactorily than they can be at Chiswick. This is a very different matter from the grandiose garden-schemes which have been already negated, and it is one which may be very fairly considered by the Council. The lease of Chiswick has still nearly twenty years to run, but the unfavourable conditions by which it is beset increase in intensity each month. On the other hand, we must remember what fine examples of cultural skill have been exhibited during the last year from Regent's Park, Holland House, Gunnersbury, Camberwell, and other suburban districts, no better off climatically than Chiswick.

Even on Tuesday last several fine bunches of Alicante Grape were shown from a garden some three miles only from Charing Cross. The bunches were not large, but they were well finished and covered with bloom.

So, in spite of climatic difficulties, it is still possible to grow creditable fruit and flowers within a shorter distance from the centre of London than is Chiswick. Nevertheless, sooner or later, Chiswick is doomed; the question is—shall it be sooner or later?

THE NATIONAL ROSE SOCIETY'S EXHIBITION.—The date of the National Rose Society's Rose Show in the Temple Gardens has been definitely fixed by the Committee for Wednesday, July 2 next.

THE BEAUTIES OF CALIFORNIA.—A pamphlet by Mr. C. H. SHINN, entitled *A Study of San Luis Obispo County, California*, describes the beauties and attractions of the "great domain of California, which includes 158,000 square miles of territory, close-packed with possibilities that no man as yet fully comprehends." The many pictures of the district of San Luis Obispo certainly show a lovely neighbourhood, extensive, fertile, and inviting. The mere idea of such abundant space, air, water, and luxuriance of vegetation, is delightful to town dwellers, and we advise those seeking a change of scene to remember the advantages of California.

"FLORE . . . DE LA FRANCE."—The last issued part of this useful publication includes the Rosaceae, and some other orders. The plants are concisely, and, so far as we have seen, correctly described, the descriptions being so arranged as to be readily comparable and easily found. The little sketches, like those of the illustrated edition of Bentham's *British Flora*, are very serviceable. It would have been better if naturalised plants like *Claytonia perfoliata*, for instance, had been printed in a separate type from the true natives, and not numbered in continuous sequence with the aboriginal inhabitants. The author of this serviceable book is the Abbé COSTE. It is published by KLINCKSIECK, Rue Corneille, Paris, and may be had from WILLIAMS & NORGATE, Henrietta Street, Covent Garden, London.

"FLORILEGIUM HAARLEMENSE."—Two parts of this illustrated periodical have reached us from the publisher, DE ERVEN LOOSJES, Haarlem. It consists of coloured representations of the best and most characteristic bulbous plants selected by the General Bulb Society of Haarlem. The descriptions are given in four languages, Dutch, German, French, and English. The plates appeal to plant-lovers of whatever nationality.

Obelisk, t. 46, is a single-flowered Hyacinth, with a compact, cylindrical spike of small yellow flowers. Its origin is not known.

Double Tulips, t. 47, is devoted to the illustration of Lord Beaconsfield, with brilliant crimson flowers, and Parmesiano white, flushed with rose.

Lilium speciosum album occupies t. 48.

Hyacinth Roi des Belges, t. 49, is a crimson-flowered variety, with a very dense, obtuse spike. It was raised from seed by Messrs. E. KRUYFF, of Sassenheim.

Single Early Tulips, t. 50, Gele Prins, has variegated foliage and yellow flowers; Prins van Oosterik is much sought after for its single crimson flowers; Gouden Bruid van Haarlem (Golden Bride of Haarlem) has yellow flowers, mottled with scarlet, and is a sport from Bruid van Haarlem.

Tab. 51 is devoted to the illustration of various forms of English Iris.

PRESENTATION.—The removal of Mr. A. C. FORBES, head forester on the Bowood Estate, to a more important position at Longleat, was made the occasion of a presentation of a handsome onyx clock, and a gold bangle to Mrs. FORBES. The presentation was made at the Institute, Derry Hill, by Mr. H. HERBERT SMITH, agent to the Marquis of Lansdowne, on Friday, January 10. Mr. FORBES, who has

been for ten years head forester at Bowood, has carried out his work with credit to himself, and advantage to the Bowood Estate. During the greater part of this period he has been a contributor of articles on forestry subjects to the pages of this journal.

ROYAL SEEDSMEN.—Messrs. KENT & BRYDON, seed merchants and nurserymen, of Darlington, have been appointed seed merchants by Royal Warrant to His Majesty the KING.

"CASSELL'S DICTIONARY OF GARDENING."—The eighth part of this serviceable publication has been issued. It is well suited for amateurs, and for those who do not require exhaustive information. Within its limitations it is well done, and well illustrated.

"CRAMPTON'S MAGAZINE."—The January number is full of good tales and other domestic matter, and we commend it to all householders who do not already know of it. The editor is Mr. HAROLD TREMAYNE; publishers are ANTHONY TREHERNE & Co., 3, Agar St., W.C.

"HORTICULTURAL DIRECTORY."—This serviceable publication is issued from the office of the *Journal of Horticulture*, Mitre Court Chambers, Fleet Street. It has evidently been revised, as many of the recent changes are inserted, but it is impossible to secure absolute correctness in such a work, particularly as the individuals most concerned so often render no assistance. "Sir JOHN LUBBOCK" no longer exists under that name, which has been superseded by the designation Lord AVEBURY. Mr. G. B. MALLETT is no longer at Mandeville House, Isleworth. Dibden House, Ealing, is untenanted.

FRUIT FROM THE CAPE.—The first ship of the Union Castle fleet of steamers bringing fruit from the Cape is due to arrive here in a few days. The *Carisbrook Castle* left Cape Town on New Year's Day with 358 packages, being the first consignment; the *Kinfauns Castle* left Cape Town on the 8th inst. with 601 packages. The description of the fruit has not been given by cable. The other ships to bring fruit are the *Kildonan Castle*, *Saxon*, *Norman*, *Dunvegan Castle*, *Scot*, *Briton*, and *Dunottar Castle*. The dates of arrival home are January 17, 24, and 31; February 7, 14, 21, and 28; March 7, 14, 21, and 28; April 4 and 11.

ROYAL PURVEYORS.—Messrs. RANSOMES, SIMS & JEFFERIES, Ltd., Orwell Works, Ipswich, have been appointed by Royal Warrant manufacturers of Agricultural and Horticultural machinery to His Majesty King EDWARD VII.

HARDY SHRUBS IN DUBLIN.—Just at present *Jasminum nudiflorum* is gay with its yellow stars and buds. The *Wych-Hazel* of Japan (*Hamamelis arborea*) is also very pretty, its branches thickset with brown buds and fully open flowers, the petals of which look like bits of crumpled gold wire. The *Tassel-Bush*, *Garrya elliptica*, is clothed at the tip of each shoot with bunches of soft grey catkins, and there are odd flowers and buds gleaming on the *Cydonia* (*Pyrus*) *japonica*, and here and there on the walls the golden-leaved forms of *Ivy* gleam brightly in the sun. On the borders are Christmas and Lenten Rose *Hellebores*, *Iris stylosa*, and the striped buff buds of *Crocus Imperati*, are opening on warm, still days.

STOCK-TAKING: 1901.—Before giving the results for the past year, it will be necessary to briefly summarise the figures relating to the trade of December, as stated in the Board of Trade Returns. Briefly, then, the value

of the imports for the past month was £46,770,097, as compared with £46,446,662—or an increase of £323,435. Now, as to exports, the output for December is given as £24,313,777, against £23,611,972 for December, 1900—or a gain of £701,805. This doubly-pleasant record for the closing month of "the year that's awa'" will be hailed with satisfaction by all interested in commerce. We come now to the year's record. The total value of the imports is £522,238,986, against £523,075,163—or a decrease of £836,177. So "things are not so bad after all." The following excerpt from the summary table are worth recording here:—

| IMPORTS. | 1900. | 1901. | Difference. |
|--|-------------|-------------|-------------|
| | £ | £ | £ |
| Total value ... | 523,075,163 | 522,238,986 | —836,177 |
| (A.) Articles of food and drink—duty free ... | 156,090,088 | 162,949,066 | +6,858,978 |
| (B.) Articles of food & drink—dutiable | 49,230,529 | 47,505,501 | —1,725,028 |
| Raw materials for textile manufactures ... | 77,347,363 | 79,401,772 | +2,054,409 |
| Raw materials for sundry industries and manufactures | 65,079,691 | 57,954,510 | —7,125,181 |
| (A.) Miscellaneous articles ... | 16,771,621 | 17,298,198 | +526,577 |
| (B.) Parcel Post ... | 1,119,626 | 1,262,462 | +142,836 |

The figures relating to the trade in fruits, roots, and vegetables, are of perhaps more interest than usual, owing to the opening up of trade. The figures are as follows:—

| IMPORTS. | 1900. | 1901. | Difference. |
|--|-----------|-----------|-------------|
| | Cwt. | Cwt. | Cwt. |
| Fruits, raw:— | | | |
| Apples ... | 2,128,541 | 1,830,208 | —298,333 |
| Apricots and Peaches | 13,689 | 13,463 | —226 |
| Bananas... bunches | 1,287,442 | 2,228,672 | +941,230 |
| Cherries... .. | 212,525 | 212,683 | —158 |
| Currants ... | 64,462 | 70,402 | +5,940 |
| Gooseberries ... | 26,045 | 21,735 | —4,310 |
| Grapes ... | 582,857 | 679,878 | +97,021 |
| Lemons... .. | 947,891 | 1,070,354 | +122,463 |
| Nuts—Almonds ... | 140,359 | 111,312 | —29,047 |
| Others, used as food | 763,295 | 904,154 | +140,859 |
| Oranges... .. | 5,090,896 | 5,281,657 | +190,761 |
| Pears ... | 476,901 | 348,866 | —128,035 |
| Strawberries ... | 423,019 | 263,700 | —159,319 |
| Unenumerated, raw... | 494,722 | 535,246 | +40,524 |
| Fruits, dried— | | | |
| Currants, for home consumption ... | 798,647 | 963,633 | +164,986 |
| Raisins ... | 564,303 | 554,408 | —9,895 |
| Vegetables, raw:— | | | |
| Onions ... bush. | 7,087,105 | 7,295,418 | +208,313 |
| Potatoes ... cwt. | 8,910,962 | 7,076,882 | —1,834,080 |
| Tomatoes... .. | 833,030 | 793,991 | —39,039 |
| Vegetables, raw, unenumerated ...value | £766,394 | £389,828 | —£376,566 |

It may be noted that one of the "unenumerated" in evidence at Christmas time was the Custard-Apple, many splendid samples of which graced the dessert on that day. Come we now to our—

EXPORTS.

Concerning which a few figures are exhibited. The twelvemonth's total is £280,498,889, against £291,191,996—showing a decrease of £10,693,107. This is a serious falling off, but then it might have been worse, and considering the enormous competition to which we are subjected by "all the nations of the earth and America," as a provincial friend put it to us, we have come out perhaps as well as could be expected. Of course, war's deadly blast has shrivelled up many a promising scheme, and the settlement of tariff charges act as deter-

rents to trade; but a nation whose foreign trade amounts to £802,737,875 must certainly be possessed with pluck and energy sufficient to carry it over all difficulties. Let us hope that the final record of 1901—a double increase—may prove a good augury.

POISONOUS EFFECTS OF MISLETO ON THE PEAR.—In the *Comptes Rendus de l'Académie des Sciences*, M. EMILE LAURENT remarks upon the existence of a principle injurious to the Pear in the berries, seeds and young plants of Mistleto. "If this parasite germinates on the branches of some varieties of the Pear (Williams, Joséphine de Malines) it causes death by midsummer. Such is the case, also, according to JEAN CHALON, with *Spartium junceum* and *Ficus elastica*. In the case of the Pear, the cortical tissue is destroyed and contracts, often several centimètres away from the point of inoculation. Inside the vessels gummy lumps are formed which impede the circulation of the sap, thus explaining the quick drying up of the young branches during the hottest days of summer. Following this necrosis of the bark, the young plant which caused it dries and dies without even penetrating the bark. The Pear is thus saved from the further injurious effect of the Mistleto. Varieties which exhibit this peculiarity are immune, while others are predisposed to attacks of this particular parasite."

A "SIGHT FOR SAIR E'EN" has been provided for passers-by in the dreary month of January by the wall of a house close to the gates of Gunnersbury Park. This is entirely covered with *Crataegus pyracantha*, upon which is still left an ample crop of scarlet berries. Among the comparatively compact branches of this creeper *Jasminum nudiflorum* is running rampant, and the clear yellow of its fully-expanded flowers forms a charming contrast to the bright berries and green leaves of the *Crataegus*. It was not our fortune to see this beautiful sight on a fine day, but when the sun is shining the effect must be truly gorgeous.

THE R. DEAN TESTIMONIAL.—A meeting of the subscribers to the above was held at the Royal Aquarium on Tuesday last, Mr. W. MARSHALL presiding in the absence of N. N. SHERWOOD, Esq., who was unwell. It was unanimously agreed that the testimonial take the form of a cheque, together with a handsomely framed address on vellum, the latter to be at a cost not exceeding £5. It was also resolved that the date of the presentation be Tuesday, February 4, being the earliest convenient day to Mr. DEAN's seventy-second birthday, February 1, and that a public dinner be arranged at which the presentation shall be made, at such place as the executive may determine. Also that the presentation be made by Mr. SHERWOOD. Mr. J. H. JONES, Secretary, reported the receipt up to date of £290 1s. 6d., and expressed a hope that it would yet reach a larger sum.

TRADE NOTICE.

Mr. C. F. LANGDON, for the last seventeen years head gardener at Newton St. Loe, has recently resigned that position for the purpose of joining as partner Mr. J. B. Blackmore, Begonia grower of Twerton-on-Avon, Bath, who has just started a nursery in which the principal feature will be tuberous-rooted Begonias. The firm will also cultivate one of the finest collections of Carnations and yellow-ground Picotees, having purchased the entire collection raised by Mr. C. Wall of South Down.

JAPANESE MAPLES AT CASTLEWELLAN, CO. DOWN.

[SUPPLEMENTARY ILLUSTRATION.]

FOR the photograph from which our illustration was taken we are indebted to the courtesy of the Earl of Annesley. The following note has been contributed by his gardener, Mr. Ryan:—

"Of the numerous plant-treasures which have been derived from Japan, this *Acer* (*A. japonicum atro-purpureum*), to my mind, bears the palm. Whether we admire its graceful foliage, its vigorous habit, or its lovely colouring, it is *facile princeps* among ornamental trees. At Castlewellan about eighteen hundred different varieties of hardy shrubs are cultivated, and we think that this plant is the choicest. The specimen shown in the illustration is 8 feet high and nearly 50 feet in circumference, and yet it is not the largest specimen here, but in shape it is very nearly as perfect as a garden shrub. The young foliage, as it comes out in the spring, is of a bright blood-red colour, turning in the middle of summer to a greenish-purple. It makes a second growth towards the autumn, when the contrast between the two colours, the bright red of the young leaves and the dark purple of the general mass of foliage, is very effective. But it is just as it is about to drop its leaves in late autumn that the colour is most remarkable, and at that time for about a fortnight it is no exaggeration to say that it is brighter and more brilliant in colour than a soldier's red coat. No one, who has not seen the forests of Canada in the autumn, can have any idea of its splendour.

Good loam, with a fair proportion of manure from an old Mushroom-bed, makes a suitable soil for Maples. It is a matter for wonder that a plant whose foliage is so magnificent in its tints, and withal so hardy—for it never suffers in the hardest frost—is not extensively planted in gardens and pleasure-grounds. Perhaps the reason may be that it takes some time to raise a stock of the plant. As to its monetary value, I remember at the Temple Show of the Royal Horticultural Society a few years ago a Duke giving £20 for a plant not to be compared with the one in the photograph; and when the traveller of one of the largest English nurseries was making his annual visit, I showed him one of our finest plants, which was then in full leaf—the sun was shining brightly through the young blood-red foliage at the time, making a lovely mass of colour, and asked him, as a matter of curiosity, what he would value it at? He replied, 'Well, if we had a customer for such a plant, and it could be moved safely, we should not think of asking less than 70 guineas for it.' As we have some hundreds of them, I thought to myself it would be a very profitable crop to grow at that price. Last spring a terrible occurrence took place, from a gardener's point of view. Eight of the Japanese deer escaped from the deer park into the spring garden, and made straight for the red Maples, and in one night ate up fifteen of them as far as they could reach, most of them being larger than the plant illustrated."

Apropos of Maples, Messrs. L. Bochmer & Co., Yokohama, send us the following note:—

"In particular, I should like to mention the lovely spring Maples, which are just now so beautiful, and especially the variety *Acer polymorphum atropurpureum dissectum*, of which I send a photograph (fig. 11, p. 41) and also a few pressed leaves, which show the beauty of this variety better than any word description I could give. This tree is one of the most beautiful ornaments in our gardens, not only

on account of its fine-cut leaf (resembling more that of a Fern than a Maple), but also because, unlike the forest Maples, which obtain their wonderful colouring in the autumn (the colouring of Japanese Maples is particularly beautiful), these leaves are at first beautifully tinted, changing later on to green. Besides the variety *atropurpureum*, we have the plain green *dissectum*, also very lovely, and both of the same drooping habit. The only way to propagate these trees here in Japan is by grafting, but as one of the trees in my garden has produced seed so beautifully, I am very anxious to experiment, and to see what the result will be. At last, I wish to say that with us these trees are perfectly hardy, and as far as I have seen in the papers, they are also hardy in England and America."

NOTICES OF BOOKS.

PROFITABLE FRUIT-GROWING.

THE sixth edition of Mr. John Wright's prize essay on this subject has been published by Messrs. Collingridge, 148, Aldersgate Street. We are told on an inset that a copy has been sent to, and accepted by the King; so that the essay, which was premiated by the Worshipful Company of Fruiterers, has now received the recognition of Royalty. It is not necessary to say anything in commendation of a book in its sixth edition. It may suffice to say that the selection of fruits has been revised. "The secret of success," says the author, in conclusion, "rests in exact knowledge, and its application in the form of diligent, well-timed, and well-judged work." Quite so; but land laws, railway rates, commission salesmen interfere with the application of sound principles. Against and for all that, the teaching of Mr. Wright's book affords the best protection.

THE ROSARIAN'S YEAR-BOOK.

THIS opens with a portrait of Mr. Orpen, and a sympathetic account of his work among the Roses, especially the Teas. Miss Jekyll has a word to say on garden Roses, the Editor reviews the events of the Rose-year, and Mr. Pemberton deals with the new Roses of the year, among which Bessie Brown takes the lead; whilst we have it on Mr. Pemberton's authority that "Tennyson, as a maiden, is useful." Mr. B. E. Cant's paper on stocks and their influence, is very interesting. Preference is given to the Briar cutting. Mr. George Paul reviews the development of new types of Roses, and the great extension of Hybrid Teas. Mr. Mawley's meteorological notes are, as usual, full of interest; his statistical data, and the deductions from them as to the chances and amount of rainfall in June and July, when Rose shows most abound, are novel and important.

THE BOOK OF BULBS. By S. Arnott (John Lane: The Bodley Head, Vigo Street).

THIS is another of the series of Handbooks of Practical Gardening, edited by Harry Roberts. Its title is very expressive of its contents. It is wonderful how much the author has been enabled to cram into little more than a hundred pages. We are not sure whether he would not have done better to have confined his remarks to a selection of bulbous plants, rather than to have enumerated so many. None better than the author could make the selection, and none better than he could lay down the general principles of their cultivation. At any rate, those who

want information about bulbous plants (using the term bulbous in a broad sense) will find in this little volume a compact encyclopædia of trustworthy information.

A GOURD PERGOLA.

MR. IRWIN LYNCH, in his interesting paper on Gourds, p. 457, suggests that "These Gourds might be grown very effectively if planted in holes so arranged as to form a pergola." This idea was carried out during the past season in Mrs. Brightwen's gardens, The Grove, Stanmore. A kitchen-garden path, some 180 feet long, was arched over with wooden poles, leaving a clear space overhead of 7 feet. The Gourds were planted out the first week in June, having been previously hardened off in cold frames. By the middle of July the pergola was formed, and large quantities of Gourds set (see fig. 12). The sorts used were those which belong to *Cucurbita Pepo*, such as the Orange, Turk's Cap, Golden Pear, warted and bi-color Gourds. A few Squash Gourds were used, but these have to be kept low down on the pergola, as their great weight twists and breaks the bines. Amongst the species used, *C. ficifolia* and *C. grossularioides* were most effective, the former being the most robust and rapid grower of all the Gourds.

One of the most striking features of the pergola was the fruits of the Long-bottle Gourd (*Lagenaria*); these came to perfection quite as well in the open as when grown in the stove. One of the longest measured 5 feet 3 inches. Plenty of water with occasional weak liquid-manure, and careful tying and thinning the shoots, are essentials to success in forming a Gourd pergola. J. W. Odell.

HOME CORRESPONDENCE.

THE RUST OF CHRYSANTHEMUMS. — Mr. McCulloch asks whether I can explain how it was that certain plants which had had no manure escaped the ravages of this disease? Of course, I cannot do this. If it was produced by the manure used, it was a manure of a very peculiar and unsuitable kind. I am well aware that some poison their plants with manures, and others almost destroy them with pure water. This does not prove that manures and water must be withheld. Manure properly applied to a healthy plant should and will not produce rust or any other disease. Manure should mean nourishment. I am of opinion that too much is made of feeding Chrysanthemums. Beginners seem to think that the best flowers are produced by applying enormous quantities of manures, whereas these are really produced by healthy, properly nourished plants. W. J. Godfrey, Exmouth.

— Not having experimented in the way your correspondent "McCulloch" has done, as given ante, p. 33, by using artificial manures on some and not on others, it is not an easy matter to give an opinion; those who try the experiments should be the best judges of the why and wherefore of the case. There are many questions one might be inclined to ask on the kind of cultivation pursued, and the sort of manure of which use is made. I have quite as puzzling a problem to solve in my case, as stated on p. 474: I may ask why has the rust left us, when artificial manures were used, and the treatment in general was the same as in other years? and again I have had plants in the open ground in the kitchen garden which I lifted in the autumn, using no manure in the potting soil, and yet some of them got the rust, and others did not. I do not think it a desirable practice to use more than one artificial manure during the season; mixing up different makers' manures cannot be right. The whole matter is puzzling, and wants further investigation. A. J. L.

A HALL FOR THE ROYAL HORTICULTURAL SOCIETY.—I am extremely glad to note that Mr. Burbidge has re-opened this subject in your columns, and fully agree with him that this present year of the Coronation of His Majesty the King, who is the patron of the Society, presents a most fitting opportunity for such agitation and ventilation of the question of what so many consider to be a vital need, as will lead to a definite plan, and what is more, to the fulfilment of same on proper lines. In my former communication in this connection, I pointed out the enormous difference existing between the status of the Society at the time of the first attempt to found a hall, and that which it enjoyed at the

entirely from the slough of despond in which it had nearly been smothered; and its executive had yet to gain the confidence to which subsequent success and rapid progress have entitled it. We know, however, that the Council is actively engaged at present in licking a practicable project into shape; and it is to be hoped that on the next general meeting of the Fellows, such a one may be ripe for discussion and adoption. Remembering, however, previous meetings, I would certainly suggest that ample notice may be given not merely of the date, but also as far as possible of the plans and prospects and general data which the Council propose to bring forward for consideration; and also it

should be obtained? This, I think, should certainly be made clear to all, for nothing handicaps schemes of this class more than uncertainty. The support given to the so-called Royal Botanical Society is also, I am glad to see, referred to by Mr. Burbidge. In view of the infinitely greater importance of the Royal Horticultural Society, and the undoubted national benefit it involves, it is an absolute anachronism that the latter is left out in the cold while an invaluable privilege is continued to another body, which is practically little more than a name and a centre for social amusement. I cannot help thinking that once a definite scheme were formulated, involving a Government concession, and supported financially on an adequate scale by the Fellows, representation in the right quarter could be made sufficiently influential to remedy this anomaly, and secure the Society at once its moral rights, its halt, and, as a consequence, an even more brilliant future than its present rapid progress argues. *Chas. T. Druery, F.L.S., V.M.H.*

AMERICAN BLIGHT ON APPLE-TREES.—The remedy given in your issue of January 11, see p. 35, is, I have no doubt, an excellent one, although difficult of application to large trees. I have found paraffin a sure remedy for the destruction of this injurious pest. On taking charge of these gardens some ten years ago, I found the whole of the bush Apple-trees very badly infested with American blight, indeed they were the worst affected trees I had ever seen; many of the branches were wreathed with insects. Knowing what an excellent insecticide paraffin is, I decided to try its effect on American blight. I put at the rate of $\frac{1}{2}$ pint of paraffin to 3 gallons of water, which was mixed by thoroughly agitating it with a syringe for a few minutes previous to applying it, which one man continued to do, while another man syringed the trees with the mixture. The experiment was a complete success, as not a living insect could be found next day. A few appeared the following summer, which were destroyed by another application of the mixture, which was put on as soon as the leaves had fallen. The trees are now quite free from the pest, but as a preventative I have the trees syringed every autumn with a similar mixture. To those whose Apple-trees are infested with this very injurious pest, I would say syringe them at once with a similar mixture to the above, which I have not the least doubt will prove as effectual in their case as it did in mine. *J. H. W.*

EARLY SINGING OF THE THRUSH.—I first noticed that a thrush in my nursery on January 4 of this year had begun piping out an odd note or two of song, and to my astonishment to-day (Jan. 7) just before the sun was setting, it broke out into almost full song and sang for nearly half-an-hour. I should think this is almost the earliest date at which the thrush has been heard in this country. *J. D. Aldridge, Eastgate Nursery, Peterborough.*

CARTER'S MICHAELMAS PEA.—As there have been several paragraphs regarding this fine late Pea in your columns, it may be interesting to send you its complete history. Michaelmas Pea was selected at our seed farms, St. Osyth, from a very tall late Pea that we introduced under the name of "Interest," but which by reason of its height did not become popular. We enclose some seeds of both Late Queen and Michaelmas so that you may see they differ materially; besides this, anyone who is a judge can readily detect a distinction in the pods during growth—the latter resembling *Ne Plus Ultra* type, the other *Autocrat* type. Our Michaelmas Pea went through the critical trials of the Royal Horticultural Society, and was the only late Pea awarded honours in 1896, the Committee regarding it as a late variety of much promise; and it was pronounced by competent judges on the spot to be distinct from all others. *James Carter & Co., Seedsmen to His Majesty the King.* [There is a conspicuous difference in the size of the



FIG. 12.—A GOURD PERGOLA. (SEE P. 46.)

time of writing; since then, nearly 1,000 new Fellows have been elected within the compass of a year, and its onward and upward progress is by leaps and bounds in lieu of an almost despairing struggle for bare existence. The spirit of the Fellows was admirably evinced at the last general meeting, when three of the advocates of the hall promised £1000 each, since, I believe, supplemented by a munificent offer by Baron Schroder of £5,000 more for the same purpose. With a Fellowship of some 6,000 or more, many of which are undoubtedly able and willing to support the scheme if once it were clearly formulated, there should be little difficulty in finding the needful sum, and certainly far less now that there must have been experienced on the last occasion, when nearly £30,000 were practically secured, though the Society had by no means emerged

is to my mind, more important that a meeting held to consider so vital a matter should not be wedged in between other Committees, so that a quite inadequate time is allowed for full discussion. The Fellows should have a previous opportunity of fully studying the pros and cons, which it is impossible to do properly when they are first made known at the meeting itself. One point was put forward and never cleared up on the last meeting, and that was the effect of the Society's charter as regards a hall of the kind desired; and subsequently the point was raised by the writer, how was it that the charter was not an obstacle at the time of the first attempt? And if it was not, while the new charter is, how was it that such an obstacle was introduced in view of the known desire of many Fellows that such a hall

Peas in the two samples, Late Queen averaging 11 to 12 millimetres, whilst Michaelmas does not exceed 10. Ed.]

LATE-FLOWERING DECORATIVE CHRYSANTHEMUMS.—I enclose two varieties of Chrysanthemums that are exceedingly useful for Christmas and New Year's decoration, Mutual Friend, which is white, and Duchess of York, yellow. The size and form of the blooms, which are produced on long, stiff stalks, make them valuable. The specimens were grown in 8-inch pots, and the plants bore six to eight blooms each. *Geo. Nottage, Mill House, Bourne End, January 7.* [The blooms are uncommonly well grown. Duchess of York is of soft yellow colour, and the blooms are of excellent size. Ed.]

NITROGENOUS MANURES FOR PEAS.—The note appended to the article on Peas in your issue of January 11 is of some importance just now, when early Peas are being sown. Many cannot understand why it is that those who supply their early crops, in gardens or in field culture, with an abundance of nitrogenous food, always secure better returns than those who rely upon their plants being able to secure sufficient nitrogen for themselves either directly from the soil, or indirectly through the action of the micro-organisms in the nodules on their roots. It is quite true that Leguminosae have this power, but only under certain conditions, one of which is warmth, and a most important condition it is, because the organisms do not increase to any beneficial extent with a low temperature of soil. Some thirty years ago, when a youngster, I was much impressed with the enormous number of nodules on the roots of a grand lot of late mid-season Peas I was pulling up after the crop was finished, and as I had manured them exclusively with phosphatic and potassic manures, I was fairly puzzled about the matter. Since then scientific research has explained the phenomenon. By careful observation during several seasons your readers will find, as many of us have already found, that for Peas required to be picked green before the end of June it will pay well to supply nitrogenous manure. A crop in June requires energetic growth in April and May, long before the soil is warm enough to enable the micro-organisms to help the plants and their gardener to a satisfactory extent. A large grower for market often assured me he found it profitable to apply nitrogenous manures to Broad Beans required for early picking. As a result of practical experience, we find the early crops have to complete their work before the nodules have begun to do their part. *Practice with Science.*

GARDENERS IN AMERICA.—Having spent a month last autumn visiting the nurseries and private gardens in and about New York, I can verify all Mr. Harding has said on this matter. I found a good man can more than double his home rate of wage. I am not referring to head gardeners who hold high positions, but to young men who have learned their business in a good garden or nursery. They can always get wages that will enable them to save more than they would earn at home. Young gardeners and nursery men from England also appreciate being welcomed in classes of society that they could not join at home. *W. Troy, Cronborough, Sussex.*

LAW NOTES.

BUYING A CHEAP LOT OF SHRUBS.

IN the City of London Court, on Friday, before Judge Lumley Smith, K.C., an action of some interest to gardeners was brought by Lionel E. Townroe, solicitor, 11, Queen Victoria Street, against a firm of auctioneers, to recover the sum of £5 for specific performance of a contract for the sale and delivery of shrubs, and in the alternative as damages for breach of contract.

The plaintiff said that on October 25 last he went to the City Auction-rooms, which the

defendants carried on, and bought an assortment of shrubs and plants. It was a clearance sale which the defendants were holding at the time, and one of the lots, which he purchased for 1s. 6d., consisted of a bundle of Azaleas and Roses, &c. After he had purchased the lot he left defendants' premises, having checked the goods. He then paid for all his purchases, and he asked the defendants' representative about delivering the things. The man assured him that they always undertook the responsibility of packing and the delivery of the goods to the carmen themselves, and he demanded one shilling for doing that. The next day the parcel was delivered to him by Messrs. Piekford & Co., when he found the lot in question missing. It consisted of twenty-two shrubs in all. It was an extraordinarily cheap lot at 1s. 6d., but they were worth £1, and therefore he now asked the defendants to be held responsible for that sum. On a previous occasion when he purchased shrubs at defendants' auction-rooms there was also short delivery.

A gardener named Harrington, whom the plaintiff employed one day a week to attend to his garden, said the parcel consisted of twelve Azaleas, eight Gueldres Roses, and some Lilacs. The twelve Azaleas alone were worth £1, and sometimes they would fetch 3s. 6d. each. It was not a fact that Azaleas could be bought at 4d. each at any time.

The defendants' case was that the whole of the goods that the plaintiff had bought were sent to him.

The auctioneer who sold the goods said that before the sale commenced he explained to the public present that the sale was being held to clear out the rubbish in the rooms. They had held a good many sales, and of course all sorts of plants, dead and alive, were left at the end. There was no catalogue on the day of the clearance sale, and he explained to the people that they must make their purchases on their own responsibility, as he had nothing to do with the goods after the sale. The majority of the buyers paid cash for their goods, and took them away there and then. There were plenty of buyers present, and he well remembered the eighteenpenny lot being knocked down to the plaintiff. They were half dead, having been in their rooms for a considerable period. He could not say whether there were twenty-four or twelve shrubs in the lot. Everything that the plaintiff had bought was put on one side, and the plaintiff asked his porter to pack them together, and this was done. The packing was done under the plaintiff's personal direction, but the next day he came with a complaint. It was ridiculous to suggest that the plants were worth more than 1s. 6d., the amount they fetched, and further, they strongly objected to pay the plaintiff £1. He would be pleased to supply the plaintiff with a dozen of the best Azaleas for 4s. There were quite forty people present on the day of the sale, so it was not likely shrubs worth £1 would be allowed to go for 1s. 6d.

The plaintiff assured the Court that the plants were in a perfect condition, and not as stated by the last witness. He admitted that he had obtained a great bargain.

Lincoln, the defendants' packer, spoke to having put the plants together at plaintiff's request. Everything that he bought was put into the basket. It was not true that on the next day when the plaintiff complained he (witness) said he was not certain whether he included all the things or not in the parcel.

The plaintiff said he paid 12s. for all the plants he bought on that particular day.

Judge Lumley Smith: And you want £1 for not having delivery of an eighteenpenny lot?

The plaintiff: They assured me that they undertook the responsibility of packing, and they demanded 1s., for which they gave me a receipt. When the basket came it did not look as if the shrubs had been stolen in transit. There were eighty different plants, which were packed separately inside the basket.

Judge Lumley Smith said he could not understand why the trade should let the plaintiff get for 1s. 6d. what was worth £1.

The plaintiff said he would have to pay £1 if he wanted to get similar shrubs at a local nursery.

Judge Lumley Smith said he was a little surprised at the plaintiff making a claim for the specific performance of a contract to deliver the shrubs. The plaintiff could not possibly have delivered to him shrubs which had been lost.

The defendants' solicitor urged that under the conditions of sale the defendants were not responsible for anything.

Judge Lumley Smith said they did not apply unless they were agreed to by the purchaser as well as the seller, and they were not. The defendants had been paid 1s. for the packing of the goods, and he was quite satisfied that the defendants' man had left out the shrubs in question. There would be judgment for the plaintiff for 10s. and costs.

A SINGULAR POINT.

A remarkably interesting case occupied the attention of His Honour Judge Coventry, sitting at Preston County Court, the plaintiff being Robert Jones, a property owner, living at Ashton-on-Ribble, near Preston, and the defendant John Taylor, who has been one of his tenants.

From the evidence, it appeared that for a score of years defendant was a tenant of the plaintiff, but received notice to quit, which notice expired on November 30 last. In front of the house was a small garden, planted by defendant, as was admitted, with Laburnum-trees, Auriculas, Pyrethrums, Roses, Raspberry-canes, Lilies, Sage plants, Phloxes, Violas, Campanulas, Crocuses, and plants of various descriptions.

On November 29 Mr. Jones saw Mr. Taylor digging up the Laburnum-trees and removing the flowers. He remonstrated with him, but without effect, defendant contending that as a market-gardener he had a perfect right to take the plants away. Plaintiff, however, instituted an action for the value of the plants, and now claimed £1 5s. 6d.

Mr. Smith, on behalf of the plaintiff, cited the Market Gardeners' Compensation Act, 1895, which defines a market-garden as "a holding or that part of a holding which is cultivated wholly or mainly for the purposes of trade or business of a market-gardener," urging that the small plot of land in question was simply used for ornamentation purposes, and could not be regarded in the light of a market-garden.

His Honour: It does not matter how small the plot of land is, but rather how the occupier uses it?

Mr. Smith: A nurseryman at the end of his term of tenancy may remove trees planted for the purpose of his trade, but a private person may not even remove a flower.

In giving his decision, the learned Judge said the whole question was whether the plants and flowers enumerated would apply wholly or only in part to a man carrying on the business of a nursery-gardener. He should quite think defendant, as he had said, did plant these things, and occasionally sold some, but at the same time others would not possibly come within the scope in question, and there would be a verdict for plaintiff for 10s.

Obituary.

EDWARD JOHN BEALE.—It is with deep regret we record the death of this gentleman, which took place very suddenly on Wednesday, January 8, from heart disease, in his sixty-sixth year. Mr. Beale was the senior partner in the seed firm of James Carter & Co., of High Holborn, London. He entered the employment of the founder of the firm more than half a century ago, and it was largely due to his business capacity and abilities that the firm has reached its present dimensions. He had for many years held a leading position in the seed trade, and the Editor of this Journal remembers

State for India for the promptitude and foresight shown in connection therewith. The full value of this transaction amounted to £16,000.

His efforts some years ago to prove the feasibility of growing Tobacco in this country, and the practical experiments he carried out under the auspices of the Government, will be recollected by many. The results were embodied in a paper read by Mr. Beale before the Society of Arts, and a book was published under the title of *English Tobacco Growing*, which was dedicated by command of her late Majesty Queen Victoria.



THE LATE EDWARD JOHN BEALE.

becoming intimately associated with him during the investigations which led to the passing of the Seed Adulteration Act, in connection with which his experience was found of great value.

Some very large transactions passed through his hands during recent years, a few of which, in view of their importance, it is worth while recording. The request for 1000 tons of seed Potatoes for the Irish famine; an order for 10,000 bushels of English seed Barley by the Canadian Government, for replenishing the stocks of that country. His firm was also entrusted by the Government of India to furnish 200 tons of Carrot seeds, for use in alleviating the famine, and received the thanks of her late Majesty's Secretary of

He was a Justice of the Peace for Middlesex, a Fellow of the Linnean Society, and one of the sixty recipients of the Victoria Medal of Honour for eminence in horticulture. His firm have been annual subscribers to the Gardeners' Benevolent Institution since its formation in 1837. He was also the first annual subscriber to the Royal Gardeners' Orphan Fund, and for many years served on the committees of the Royal Horticultural Society. He was a candidate for Parliamentary honours on two occasions, but beyond lessening a large majority, was unsuccessful.

Mr. Beale had been ailing in health for some few years, during which time he has been much assisted by his sons, and the business will be conducted by them as usual.

SOCIETIES.

ROYAL HORTICULTURAL.

JANUARY 11.—The first meeting of the Committees of this Society since the turn of the year, and following an interval of four weeks, was held on Tuesday last, in the Drill Hall, Buckingham Gate, Westminster. There was a good attendance of members upon each Committee, and a satisfactory display of exhibits, especially bearing in mind the fact that the weather had turned very cold, and in some gardens as many as 12° of frost was registered on Tuesday morning.

Among the Orchids were many interesting plants and valuable novelties, and the ORCHID COMMITTEE recommended as many as twelve awards, including two Botanical Certificates, six First-class Certificates, and two Awards of Merit.

The FLORAL COMMITTEE recommended four Awards of Merit in respect to *Exacum Forbesii*, *Asparagus japonicus* (?), *Amaryllis Impératrice de Brésil*, and *Iris Tauri*. One of the most remarkable exhibits before this Committee was a group of *Begonia socotrana* from Mr. LEOPOLD DE ROTHSCHILD'S garden.

The FRUIT AND VEGETABLE COMMITTEE recommended a First-class Certificate to that excellent Pear Winter Nelis, but no award to a novelty. A collection of late Pears from Messrs. JAS. VEITCH & SONS, Ltd., was interesting.

In the afternoon seventy-one new Fellows were elected to the privileges of the Society.

Floral Committee.

Present: W. Marshall, Esq. (Chairman); and Messrs. Chas. T. Drury, H. B. May, James Walker, R. Dean, G. Reuthe, John Jennings, C. E. Pearson, Jas. Hudson, R. C. Notcutt, W. Howe, W. Bain, Chas. Dixon, H. J. Cutbush, Chas. Jeffries, C. J. Salter, Chas. E. Shea, H. J. Jones, W. P. Thomson, E. H. Jenkins, C. Blick, Geo. Paul, Ed. Mawley, F. Page Roberts, and H. Turner.

Cyclamens were in grand condition from Messrs. H. Low & Co., Bush Hill Park Nurseries, Enfield. There were variations of colour from pure white to deepest purplish-crimson. The plants were well flowered, and the blooms of large size and good form; one variety with salmony carmine flowers was very distinct. The "papillon" section was well represented by numerous varieties (Silver Banksian Medal).

A magnificent group of plants of *Begonia socotrana* from LEOPOLD DE ROTHSCHILD, Esq., Ascott, Leighton Buzzard (gr., Mr. J. Jennings), served to illustrate what a grand plant this is when it is afforded the best cultivation. There were 140 plants in 5-inch and 6-inch pots; the foliage was good, and the richly-pink flowers excellent. The blooms were about a foot or more high, and the stems being stiff, they are exceedingly useful for cutting purposes; whilst the plants themselves are handsome specimens for putting into vases. Mr. Jennings divides the plants in May and cultivates them in a warm greenhouse kept at 55° or 60°. They commence to bloom early in December, and continue until February. They gradually die down after that time, and during March and April are resting (Silver-gilt Flora Medal).

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, exhibited small groups of several very interesting plants. In the first place there was *Coleus thyrsoides*, a blue flowering species, which has been figured in these pages and commented upon on many occasions, but which is not yet cultivated in very many private gardens. Messrs. VEITCH, who obtained the plant through the Royal Gardens, Kew, exhibited it in very good condition on Tuesday. The specimens were in 5-inch pots, were about 2½ feet high, and most of them bore four inflorescences, each 5 to 7 inches long. The blue colour of the blossoms was very well developed, and the foliage was good, but it soon showed slight flagging in the cold atmosphere. As much depends upon the time when cuttings of the plants are taken, it may be of service to add that in this case the cuttings were inserted on July 16 last. The species requires the temperature of a warm greenhouse. Also *Moschosma riparium*, from British Central Africa, a plant referred to on p. 10, as flowering at the present time in the greenhouse, Royal Gardens, Kew. The leaves are soft, hirsute on both surfaces, with margins notched regularly; the flowers are very small, produced upon axillary racemes, and are faintly tinted with purple colour. Messrs. VEITCH & SONS had also a nice plant of *Hamamelis arborea*, and branches of *H. japonica* *Zuccariniana*, and *Cotoneaster pumila* (Silver Flora Medal).

Messrs. H. CANNELL & SONS, Swanley, Kent, also showed a group of plants of *Coleus thyrsoideus*, already mentioned; and in this case, too, the plants were well grown and freely flowered. In addition to the *Coleus*, there were plants of *Euphorbia* (*Poinsettia*) *pulcherrima*, and some *Richardia africana* (Silver Flora Medal).

Messrs. H. CANNELL & SONS had also six very remarkable specimens of *Begonia Gloire de Lorraine*, in 8-inch pots, the plants being quite smothered with richly coloured flowers.

The sport from *Begonia Gloire de Lorraine*, known as Turnford Hall, was again shown grandly by the Exors. of the late T. Rochford, Turnford Hall, Broomhouse. The group was of considerable extent, and the individual specimens quite of the type seen on former occasions (Silver Flora Medal).

Mr. K. DROST, Kew Road Nurseries, Richmond, exhibited a great bouquet of forced Lilac, the stems of which were cut 3 ft. or more in length, and inserted closely together in an ornamental vase. The forced plants were English-grown (Silver Banksian Medal).

Messrs. W. CUTBUSH & SON, Ilighgate Nurseries, London, and Barnet, Herts, exhibited a group of plants containing varieties of *Erica*, such as *E. hyemalis*, *E. h. alba*, *E. melanthera*, *E. gracilis vernalis*, and *E. ovata*, with short, pinkish flowers. The *Otaheite Orange*, *Daphne indica*, were also shown.

Messrs. R. WALLACE & CO., Kilnfield Nurseries, Colchester, exhibited several early-flowering Irises in pots, including *I. histrio*, *I. alata*, *I. Bakeriana*, *I. Heldreichii*, and *I. Tauri*.

Zonal *Pelargonium* "Beauty," described as a "perpetual-flowering Geranium," was shown by Mr. GEO. H. TOWNSEND, nurseryman, Malvern Link. Quite a large group of plants was shown, and the flowers which were single, and of bright scarlet colour, would make the variety a very effective one for bedding.

Mr. THOS. S. WAKE, Hale Farm Nurseries, Feltham, had a few hardy plants in pots, including several hardy Cacti, as *Echinocactus Simproni*, *Opuntia robusta*, *O. polyacantha*, &c. *Gentiana acaulis*, *Primula Forbesii*, and other plants in flower.

Mr. W. J. GODFREY, Exmouth Nurseries, Devon, showed nearly 200 flowers of a white Japanese or decorative *Chrysanthemum*, named Winter Queen. The flowers are pure white, of large size, and the variety should become one of the best of its section.

Mr. J. W. SPRINGETT, Holly Nursery, Hammond Street, Cheshunt, Herts, exhibited blooms of a *Chrysanthemum* named Buff Queen.

A new sort of bellows, for applying sulphur and other fungicides and insecticides to plants, was shown by MM. DE LUZY FRÈRES, 41A, Harold Street, Camberwell, London, S.E. It is called the G.C.V.P. Bellows, and we believe that it was considered by most members of the Committee to be a most convenient appliance for the purpose.

Awards of Merit.

Amaryllis Imperatrice de Brésil.—The plant shown under this name by Sir TREVOR LAWRENCE, Bart., Burford, Dorset (gr., Mr. W. Bain), had a thick, bulbous stem, nearly 18 inches long, also long, pendent leaves. The inflorescence bore four flowers, each of them quite 5 inches in length, and pale lilac in colour, becoming nearly white towards the base of the interior, which is much spotted with minute, deep lilac-coloured spots. The flowers were large, and exceedingly handsome in form and colour. The plant is probably a variety of *Hippeastrum procurrens*, and a better one than we have previously seen.

Exacum Forbestii.—This is a new Socotra species, of bushy habit, a foot or less in height as shown, growing in 6-inch and 7-inch pots. Leaves triangular, 1½ inch across at the base; flowers about ½ inch across, in terminal racemes, purple in colour, with prominent yellow anthers. The plants were grown in a house having an intermediate temperature. From Messrs. JAS. VEITCH & SONS.

Iris Tauri.—An early-flowering species, illustrated and described in the *Gardeners' Chronicle*, March 23, 1901, p. 191. The flowers are about 3 in. high, of purplish-blue colour, except the lip, which is very prettily marked with white, and has an orange-yellow-coloured line along the centre. From Messrs. R. WALLACE & CO.

Asparagus japonicus (?).—This plant was shown by Messrs. H. & J. ELLIOTT, Courtbushes Nurseries, Hurstpierpoint, Sussex, and has densely green foliage, with flat, curved phyllocladum ½ in. long.

Orchid Committee.

Present: Henry Little, Esq. (in the Chair); and Messrs. Jas. O'Brien (Hon. Sec.), H. Ballantine, De B.

Crawshaw, E. Hill, F. A. Rehder, W. A. Bilney, H. T. Pitt, H. A. Tracy, G. F. Moore, T. W. Bond, J. W. Odell, W. H. Young, W. H. White, W. Boxall, J. W. Potter, F. Sander, and H. J. Chapman.

There was a very interesting display of Orchids, in which fine *Cypripediums*, *Odontoglossums*, and *Laelia anceps* predominated.

Baron Sir H. SCHRODER, The Dell, Egham (gr., Mr. H. Ballantine), contributed a group of cut spikes of remarkable varieties, some of them unique, and including the beautiful *Odontoglossum* × *Wilkeanum* *Princess Christian*, a pure white purple spotted form, more generally called *O. crispum* *Princess Christian*; *O. Wilkeanum* *Godefroyanum*, *O. crispum* *nobilis*, a very showily blotched variety; two very fine *O. × crispum* *Harryanum*, *O. prionopetalum*, *O. × excellens* *luteolum*, a wholly clear yellow form; *Cypripedium insigne* *Sanderi* and *Sanderianum*, and some good hybrids of them; *C. × Leeanum* *giganteum*, *princeps*, and others; *C. × Acteus* *Langleyense*, *C. × Deedmanianum*, *C. × Morganianum*, and other *Cypripediums*; and a good set of varieties of *Laelia anceps* (Silver Flora Medal).

R. I. MEASURES, Esq., Cambridge Lodge, Camberwell (gr., Mr. H. A. J. Chapman), showed a selection of grand hybrid *Cypripediums*, in which the noble *C. × Leander* "Cambridge Lodge variety" was the gem (see Awards). With it were *C. × Milo* *superbum* (*insigne* *Chantini* × *enanthum* *superbum*), a perfect flower very richly coloured; *C. × Hera* *punctatissimum*, richly spotted both on the petals and dorsal sepal; *C. × Charles* *Richman* *superbum*, of a uniform bright rose, with darker markings; and *C. × Wodea* (*superbiens* × *Leeanum*), a fine flower, of pale tints, and quite a novelty.

Messrs. JAS. VEITCH & SONS, Chelsea, staged a group in which were several varieties of the yellow *Laelia* × *Mrs. Gratrix*, all differing in tint; *L. × Icarus* (*cinnabarina* × *flava*), with yellow flowers having a purple front to the lip; *L. × Clio* (*cinnabarina* × *glaucia*), a small reddish-yellow flower, with purple lines on the side lobes of the lip; *Laelio-Cattleya* × *Orpheus*, a charming white hybrid of *L. glauca* × *L. C. × Remula* (*L. tenebrosa* × *C. Acklandiae*; *L. C. × Epicasta*; and the showy *Cypripedium* × *Leander* var. *rubrum*, with a very handsome purple and rose-tinted dorsal sepal.

DE B. CRAWSHAW, Esq., Rosefield, Sevenoaks (gr., Mr. Stables), showed cut examples of fine forms of *Laelia anceps*, of which *L. a. Chamberlainiana* and *L. a. Hilliana* *Rosefieldensis* secured awards; also *Odontoglossum* *Leeanum* *Crawshawianum*, more densely spotted than the type.

W. SHUTER, Esq., 22, Belsize Grove, Hampstead (gr., Mr. Armstrong), showed a group of well-flowered *Cypripedium* *insigne*, with which were several healthy plants of *Saccobolium giganteum* with two spikes each, and *Angreum eburneum* *virens* with two spikes; all in excellent condition, although grown within three miles of Charing Cross. A Silver Banksian Medal was awarded.

Messrs. B. S. WILLIAMS & SON, Holloway, secured a Silver Flora Medal for a good group in which the forms of *Lycaste Skinneri* were specially good. With them were several *Calanthe* × *Bella*, and *C. × Veitchii* *alba*; *Cypripedium* × *rubrum*, *C. × Harrisianum*, *Williams' variety*, *C. × Williamsii*, *C. × Dauthieri* *marmoratum* and *striatum*, with curiously striped flowers; *C. × Sallieri* *aureum*, *C. × nitens* *superbum*, in several good specimens; *C. insigne* *punctatum* *violaceum*, *C. × Leeanum* *superbum*, and *Laelia anceps* *Hilliana*.

F. W. WELLESLEY, Esq., Westfield, near Woking (gr., Mr. J. Gilbert), sent *Cypripedium* *insigne* *Westfieldense* and *C. i. Gilberti*, both with good distinctly blotched dorsal sepals.

M. FLORENT CLAES, 63, Rue des Champs, Brussels, showed *Odontoglossum* × *loochristense*, the finely blotched *O. × Adriane* *Romulus*, and flowers of *Odontoglossum crispum*; also *Oncidium cucullatum* *Claes' variety*, with nearly white, rose-spotted labellum.

H. F. SIMONDS, Esq., Beckenham (gr., Mr. G. E. Day), showed *Cypripedium* *insigne* "H. F. Simonds," in which the brown colouring in the upper sepal is continuous and not blotched.

Mr. ARTHUR SUTTON (gr., Mr. Alex. Wright), Bucklebury, Woolhampton, showed *Cypripedium* × *Mrs. A. W. Sutton* (*Chamberlainianum* × *niveum*), and *C. × Jessie* *Wright* (*Lathamianum* × *Chamberlainianum*).

Awards.

FIRST-CLASS CERTIFICATES.

Laelia anceps *Chamberlainiana*, from DE B. CRAWSHAW, Esq., Rosefield, Sevenoaks (gr., Mr. Stables).—This

grand variety of *Laelia anceps* originated in the gardens of the Right Hon. Joseph Chamberlain, Highbury, Birmingham, from whence it has on several occasions been noted in the *Gardeners' Chronicle*. It may be regarded as the highest form of the "grandiflora" class, the flower being the largest, best in shape, and with a very remarkable openly-displayed labellum. The sepals and petals are broad, soft rosy-lilac, the lip having purple lines at the base; the fronts of the side lobes and the very broad front-lobe being of a rich crimson purple.

Cypripedium × *Leander* "Cambridge Lodge variety" (*Leeanum* var. × *villosum*), from R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell. A stately variety, of a very fine and variable set of hybrids, of which this is the best of the lighter forms in every respect. The flowers, which are very large, are of very fine substance. The dorsal sepal is white, with a small green base, the central area having some dark purple spotted lines. The petals and lip are massive, yellow, with a glossy red-brown tinge over the surface.

Cypripedium × *Miss Fanny Wilson* (*Sanderianum* × *Argus*), from DREWETT O. DREWETT, Esq., Riding-Mill-on-Tyne.—This elegant hybrid has all the weird beauty of *C. Sanderianum*, with much of the rich colouring of *C. Argus*. The upper sepal is pale green, changing upwards to white, and bearing a dozen or so of purple lines blotched in the lower part, and continuous in the upper. The petals are over 6 inches long, with arched shoulder-like upper part simulating *C. Sanderianum*, which it also continues in the hairy warts at the edge. The petals are drooping, greenish-white, spotted with purple, and tinged with rose at the extremities, which are singularly curved; lip reddish-rose; staminode large, reddish-yellow.

Cypripedium × *Mrs. W. Mostyn* (? *Calypso* × *Leeanum* var.), from F. W. WELLESLEY, Esq., Westfield, near Woking (gr., Mr. J. Gilbert). One of the finest hybrids which has appeared of late, large in size, fine in form, and grand in colour. The upper sepal is green at the base, and white beyond the basal part, bearing some large blackish-purple blotches, from which spreads upwards a rich purplish-rose tint extending to the white margin; the broad petals and lip are light yellow, the petals spotted and slightly veined with purple, and the lip faced with the same tint. The whole surface of the flower is glossy.

Odontoglossum *Wattianum* *Hardy's variety*, from Baron Sir H. SCHRODER, The Dell, Egham (gr., Mr. H. Ballantine).—This fine variety received an Award of Merit May 25, 1893. It is very different from the original form. Its features are those of *O. Harryanum* distinct traces of which appear in the slightly concave base of the lip. The plant bore a very fine inflorescence of pale yellow flowers, heavily marked with purplish chocolate. Lip white, with purple markings at the base.

Cattleya Trianae *alba* "Mrs. Edward Sondheim," from Messrs. HUGH LOW & CO., Bush Hill Park.—A very large, pure white flower, with very broad petals, and a more ample labellum than is usually seen in *C. T. alba*.

AWARDS OF MERIT.

Odontoglossum × *Davivierianum* *Burfordense*, from Sir TREVOR LAWRENCE, Bart. (gr., Mr. W. H. White).—A pretty natural hybrid of *O. nebulosum* and *O. maculatum*. Sepals greenish-white, spotted with chestnut-brown; petals white, with red-brown spots on the inner halves; lip white with brown spots.

Laelia anceps *Hilliana* *Rosefieldensis*, from DE B. CRAWSHAW, Esq., Sevenoaks.—A fine white flower with slight blush tint and a clear pink colour on the side lobes and front of the lip.

Laelio-Cattleya × *Orpheus* (*L. glauca* × *C. Trianae* *alba*) from Messrs. JAS. VEITCH & SONS.—A very satisfactory hybrid having the fine substance and fragrance of *Laelia glauca*, but in size and appearance of labellum more nearly approaching *C. T. alba*. Sepals white, slightly tinged pink; petals and lip white, the latter having a sulphur-yellow disc.

Cypripedium × *Stevensii* (*Calypso* *Oakwood* variety × *Alberti* *Hye*).—From W. THOMPSON, Esq., Walton Grange, Stone (gr., Mr. W. Stevens). A large flower, with distinct traces of the fine *C. Calypso* *Oakwood* variety. Upper sepal white, marked with purple on the lower part; petals and lip greenish-yellow, with a tinge of purple.

BOTANICAL CERTIFICATE.

Gomesa (*Rodriguezia*) *planifolia*.—From Sir TREVOR LAWRENCE, Bart. (gr., Mr. W. H. White). A good speci-

men of this pretty Orchid, also known as *Rodriguezia planifolia*, with a number of racemes of greenish-yellow, fragrant flowers, was sent.

Ornithidium Sophronitis.—From R. I. MEASURES, Esq. (gr., Mr. H. J. Chapman). A fine dwarf tuft of this pretty species, bearing scarlet flowers, was shown.

Fruit and Vegetable Committee.

Present: George Bunyard, Esq. (Chairman), and Messrs. H. Balderson, James H. Veitch, W. Bates, S. Mortimer, Alex. Dean, Geo. Kelf, W. Pope, W. Fyfe, H. Markham, M. Gleeson, Jos. Cheal, H. Somers Rivers, Jno. Basham, F. Q. Lane, J. Willard, Geo. Wythes, W. Poupart, C. Herrin, A. H. Pearson, E. Shaw Blaker, and W. Wilks (Rev.).

A Seedling Pear "Anchor" was shown by Captain CARSTAIRS' gardener, Mr. C. Ross. The fruits were small in size, and of soft texture.

The "Sutton" Rhubarb was shown from the Earl of ANCASTER's garden, Normanton Park, Stamford (gr., Mr. Butler). The stems were 2 feet or more long, of bright red colour.

There was again an object-lesson in the cultivation of the Vine in the neighbourhood of London. W. SHUTER, Esq., 22, Belsize Grove, S. Hampstead (gr., Mr. F. Armstrong), exhibited eighteen bunches of Black Alicante Grapes of very commendable quality and "finish." They were grown within three miles of Charing Cross, and the Vine from which they were cut was said to have been planted in 1876, and this season has ripened forty-five bunches of fruit. A cluster of Oranges came from the same garden (Silver Banksian Medal).

Messrs. JOHN LAING & SONS, Forest Hill Nurseries, London, S.E., exhibited a collection of about sixty varieties of Apples and a few Pears, including many of the best varieties now in season (Silver Knightian Medal).

Apple St. Basil was shown by Mr. JOHN BASHAM, Fairbank Nurseries, Bassaleg. The fruits were of moderate size, and richly coloured.

A collection of seven varieties of Pears from FRANK BIBBY, Esq., Hardwicke Grange Gardens, Shrewsbury, included Glout Moreau, Bergamotte Esperen, Beurré de Rance, Olivier de Serres, Easter Beurré, Passe Colmar, Née Plus Meuris (described as being eatable in that locality this year for the first time in twenty-eight years); Glout Moreau from open standards was described as never having been eatable in the locality previously (Silver Banksian Medal).

Messrs. JAS. VEITCH & SONS, Chelsea, showed dishes of twenty-two varieties of late dessert Pears. Amongst these were beautiful samples of Olivier des Serres, President Barabé, Beurré Dubuisson, Josephine de Malines, Chaumontel, Passe Crassane, Nouvelle Fulvie, Née Plus Meuris, Marie Benoist, Comte de Flandre, Le Lectier, Zoë, &c. (Silver Knightian Medal).

Awards.

Pear Winter Nellis.—This excellent late-ripening Pear, which, according to Hogg, was introduced to this country in 1818 by the Horticultural Society of London, and which was illustrated in the *Gardeners' Chronicle*, in 1845, was recommended a First-class Certificate on Tuesday last. It is so well known for its rich and pleasant flavour, there is no need to describe the fruit here. The variety is recognised as one of the best winter Pears, if not the very best, notwithstanding that, like many other good Pears, it is subjected to faint praise in the *Fruit Manual*, where too much importance is given to experience gained in one district only—Teddington: "As grown at Teddington, it is a good Pear, but of rather flat flavour. Not to be compared with Josephine de Malines." From Messrs. JAS. VEITCH & SONS.

EALING GARDENERS'.

JANUARY 6.—The lecture session of this Society was opened on the date named by an address from Mr. RICHARD DEAN, V.M.H., on "Floriculture and Florists during the past fifty years." In his opening remarks the lecturer dealt with florists and plant cultivators who in the fifties were local residents, such as Dr. Sankey, Mountjoy & Son, Robert Ronalds, Isaac Wilkinson; while the mention of Mrs. LAWRENCE, with some account of the fine specimens at that time grown at Ealing Park, proved very interesting.

The florists of the two past generations were also dealt with, many interesting reminiscences being detailed. The gradual improvements in some of the leading florists' flowers were traced, and due honours paid to those who were prominent raisers and cultivators. The lecturer named as epoch-making flowers, the Fancy Pansy, the Japanese Chrysanthemum, Clematis Jackmanni, Begonia boliviensis and its allies,

with the first new variety, B. Sedeni, Hippeastrums, and Dahlia Juarezii. The improvements made with the Gladiolus, Streptocarpus, and Sweet Pea were also mentioned, and reference made to those mainly instrumental in carrying on the work. Some leading exhibitors, with whom the lecturer had been associated, were passed in review, the interest of the audience being well sustained to the end. A cordial vote of thanks was passed to Mr. DEAN, and the same compliment was paid to Mr. J. HARRIS, the President of the Society, who occupied the Chair.

WARGRAVE GARDENERS'

JANUARY 8.—On Wednesday evening about sixty members and friends of the Wargrave and District Gardeners' Mutual Improvement Society sat down to a dinner at the "George and Dragon" Hotel, Wargrave. The Vicar of Wargrave, a vice-president of the Society, presided. Besides the usual loyal toasts, he proposed that of "The Association" in a very humorous speech. His hits at the gardeners called forth frequent applause. Mr. H. Coleby, F.R.H.S., Hon. Sec., responded, and gave a short account of the Society since its formation four years ago. Opportunity was taken during the proceedings to present a beautiful silver ewer and fruit stand, loaded with choice fruits and flowers, to Mr. Coleby, as a mark of the members' appreciation of the services he had rendered the Association. Mr. Coleby heartily thanked the members for their kind gift. H. Coleby, Hon. Sec.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

ELEVEN new members were elected on Monday evening last, and one other nominated. The committee were compelled by rule to reject two candidates, they being just over forty-five years of age. Two new honorary members were elected. An old member that has been on the sick-fund for eleven months, and being still ill and in distress, was granted £2 from the benevolent fund. Two members were deputed to attend the meetings on January 14 and 15 respecting the Old Age Pension scheme. Three members were transferred from the lower to the higher scale of payments. Messrs. W. Gunner and T. H. Puzey were re-elected to audit the accounts of the past year. The treasurer has a balance in hand of £182 14s. 2d.

NATIONAL CHRYSANTHEMUM.

THE usual meeting of the executive committee took place at Carr's Restaurant, 265, Strand, on the 13th inst., Mr. Thos. Bevan in the Chair. A mass of correspondence was read, including offers of valuable special prizes from Messrs. E. Webb & Sons, Wordsley; Mr. G. H. Richards, Borough High Street, S.E.; and Mr. W. J. Godfrey, Exmouth, which were accepted.

The annual general meeting was announced for Monday, February 3, at Carr's, and it was resolved that in the event of the President, Sir A. Rolit, M.P., being unable to preside, that Mr. C. E. Shea, a Vice-President, be requested to do so. A decidedly satisfactory financial statement was read, showing an income of over £1,000, with a good balance over expenditure; the reserve fund showed a balance of £110, while there was a considerable balance of assets over liabilities. The accounts were passed for audit subsequent to presentation to the annual general meeting. A draft report was also read and passed, and ordered to be printed and circulated among the members in the usual way. Mr. Geo. J. Ingram was nominated for the office of auditor in the place of Mr. W. Seward, who retires by rotation. The secretary brought up the revised schedules of prizes as passed by the revision sub-committee, which were approved; and judges for the various exhibitions in the present year were appointed. A place for the future meetings of the Society was also considered, the present meeting-place having to be rebuilt. Offers of accommodation have been received from the Holborn Restaurant, Anderton's Hotel, and Messrs. Bertram & Co. The matter was left in the hands of the Secretary to see Mr. Bertram, with a view to a meeting-place being appointed at the Royal Aquarium. Some new members were elected, and the Corbridge and District Chrysanthemum Society admitted to affiliation.

CROYDON AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT.

THE annual meeting of this Society was held at the Sunflower, George Street, Croydon, on Tuesday night, Mr. W. J. Simpson (The Gardens, Falkland Park) in the chair.

The second annual report, which was adopted on the proposition of Mr. C. A. Blogg, seconded by Mr. W. Turney, stated that the membership at present on the

books was 120, being an increase on the previous year, which showed that the Society was gradually extending its influence. The funds of the Society were in a sound condition. There had been twenty-one meetings held during the year, at which lectures and papers had been given on various topics relating to horticulture, the whole of which had been of a high standard of excellence, and the discussions which followed were most interesting, instructive, and carried on in a most harmonious spirit. The average attendance at the meetings had been fifty. The report also expressed cordial thanks to lecturers and readers of papers and others who had given assistance to the Society. It also expressed regret at the death of Mr. G. Tyler, one of the members of the Society, and tendered their condolence to his relatives and friends. The accounts, which accompanied the report, showed a favourable balance of £3 6s. 9d.

The Chairman having read letters of apology for absence from the President (Mr. Frank Lloyd), who promised, however, to take the chair at the annual dinner on January 22, and others, the election of officers was proceeded with.

A discussion followed on some proposed alterations in the rules, and ultimately, on the proposition of Mr. W. Turney, it was agreed to appoint a committee to revise the rules of the Society and make suggestions to be considered at a special general meeting to be called for the purpose. Messrs. Blogg, Harris, Turney, Laing, and Woodgate were elected to act as the committee.

The valuable services of Mr. J. Gregory as secretary were cordially recognised, and votes of thanks were also accorded to the Chairman, the committee, and other officers of the Society.

FLORISTS' FLOWERS.

NEW VARIETIES OF CHRYSANTHEMUMS.

THE following additions to the list of novelties given in an issue of the *Gardeners' Chronicle* towards the end of 1901, may be of interest to growers and purchasers of young plants in the present year. The Princess was raised in Australia, and is a flower of full size, the florets moderate in width, drooping, and imparting much grace to the flower, which is of creamy-white colour, flushed with lilac. W. R. Church was sent out last season as a new Australian variety, which has come up to the high expectations of the florist, as being an improvement upon many existing varieties; it is an incurved Japanese, with stout florets in the style of Henry Weeks. A well-developed flower will measure 8 inches in diameter, and have a proportionate depth. In colour, the inside or surface of the floret is a ruby-red, and the reverse chestnut, the bloom tipped with silver when unfolding. It will be regarded as being one of the best of the novelties. The plant grows vigorously, and is of dwarf habit.

Madame Herreweghe is said to be a sport from Australia, but it is quite distinct from it in form of flower. It possesses drooping florets, even when expanding, which with age twist at the point; it is an acquisition, and it is white, flushed with rich cream or pale primrose in the centre. Donald McLeod has broad, drooping florets, which curl slightly at the tip, forming a flower about 8 inches in diameter, and fully 5 inches deep, of a yellow colour, lined and speckled with purplish-crimson—one of the best new varieties of this type.

Miss E. Foulton belongs to the incurved form of Japanese, and is a full size flower measuring $7\frac{1}{2}$ inches in diameter, and as much as $6\frac{1}{2}$ inches deep; with broad florets incurving, with a slight twist at the tip. The colour is pure white; and no matter how choice and limited the collection, this variety should be added to it, for I know of no better Japanese incurved variety. Mrs. T. W. Pickett is an Australian seedling, and an exact counterpart of Nellie Pickett in all except colour, which is pure yellow; this will become a great favourite. Henry Baines

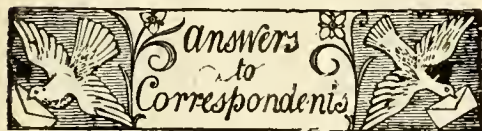
bears a resemblance to Edwin Molyneux in form and in petal, excepting that the new-comer has slightly broader petals; it is a variety that is sure to find favour with exhibitors.

Henry Stowe is seen sometimes as a perfect incurving flower, and sometimes it is a semi-reflexed one. When freely grown it is a pretty flower, the colour white, edged and flushed with light purple; and a finely-developed flower will measure 8 inches by 6 inches. Ethel Fitzroy has slightly drooping florets which incurve at the tip. It is a flower of full size, and of a rich yellow-amber tint; a variety which will not fail to become popular. Mrs. J. Cleve has a free and fully reflexed floret, making flower of good depth; rose coloured surface, with a yellow reverse to the florets. Mrs. Frank G. Smith is a flower of deep orange, flushed with bronze, and a promising variety. Master C. Seymour belongs to the incurved Japanese section, reminding one most of Mrs. C. Wheeler; in colour it is deep red inside, with a chestnut-bronze reverse. Nellie Perkins would be best described as a glorified International. Snow-drift is a loosely incurving Japanese of a beautiful tint. Ella Hexheimer is a loosely incurving Japanese, with the lower half a rosy striped purple; the centre of the flower is a rich yellow, and the florets are hirsute at the tips. Major Plumbe is a true incurved Japanese of a rich orange-yellow tint. Mrs. R. Darby has long semi-drooping florets, and is a flower of much depth, of an amaranth tint.

Godfrey's Pride is one of a good type of incurved Japanese, broad, with the reverse of the florets yellow, shaded with chestnut, and the inside of a light crimson tint. Mrs. J. T. Thornycroft has narrow reflexing florets, which form a deep and compact bloom; in colour apricot-yellow, or red and yellow. Madame Paolo Radacelli is an incurved Japanese, with florets of middling size, and of a rosy-pink tint. Marquis V. Venosta: the florets are bifurcated at the tip; in colour it is rose, shaded with silvery-white.

Queen Alexandra is of the Lady Ridgeway section, and when that variety is fully expanded, the florets are broad, reflexed, and possess a charming colour, viz., golden-amber, suffused with terracotta. Godfrey's King is a true Japanese, with middle-sized, semi-drooping florets of a rich terracotta-red, flushed with amber. Kimberley in some instances is a true incurved Japanese, while in others it is quite reflexed, owing presumably to age; the florets are of middle size, and of a deep yellow colour. May Perkins is a rich yellow coloured incurved Japanese. Mrs. J. E. Collins is also a large incurving Japanese, silvery-peach colour. *E. Molyneux*.

(To be continued.)



BEGONIA GLOIRE DE LORRAINE: *Berks.* Allow the plants to flower themselves out, when young shoots will form naturally without cutting back, which may be used for cuttings if an increase be desired. From this period onwards the plants should be slightly rested in a warm greenhouse or pit (45° to 50°) for a period of two or three months, the stems being somewhat cut back, and at the end of the rest period partially shake out and repot.

BOOKS: *Auricula*, Rudolf Beer. One is, we believe, published at the Bazaar Office, 170, Strand, London, W.C.

CANKER IN MARECHAL NIEL ROSE: *S. S. J.* Appearances such as your specimens present have been attributed to injury from frost.

COLLECTION OF SIX KINDS OF VEGETABLES WITH WHICH TO COMPETE AT AN EXHIBITION HELD IN THE FIRST HALF OF JULY: *Exhibitor.* Marrowfat Peas; Potatos, Kidney or Round; Cauliflowers; French Beans; Cabbage, or Globe Artichokes; Carrots or Turnips.

DAFFODIL BULBS NOT FLOWERING: *Hook.* The flowers are not formed in the bulbs, so that you will not get bloom this season. Next year they may produce flowers in the ordinary way. It is not uncommon for bulbs to wait a year or two before they form flower.

DONATION: *A. E.* Has been paid to the treasurer of the Royal Gardeners' Orphan Fund.

EMPTY GREENHOUSES: *Bloemfontein.* Out of nothing, nothing is to be obtained. You must spend money in seeds, plants, or roots. Radishes are not worth the trouble; the market grower will undersell you with their produce from beds in the open. You had better make up sloping beds of soil, and grow Mustard and Cress. Many successional crops can be obtained before the heat in the houses becomes too great to grow these seedlings to a profit. Fill a house or two with Rhubarb-roots, disposing them close together on the floor, and packing light soil among them, covering the whole with litter to draw up the stalks to a considerable length and give a delicate colour. Raise Tomato-plants in sufficient numbers to fill two or all the houses. Not much will be gained by digging up the clay bottom; better put more soil into the house, or better still, grow the Tomato-plants in rough boxes, 1½ ft. wide and 1 ft. deep, filling these with loamy soil, and afford manure-water and manurial top-dressings when you have got a good set of fruit. No fumigation or vaporisation is good for unrooted cuttings. Make preparations for using the houses for forcing Roses, Dutch bulbs, Azaleas, Lilac, &c., another year.

FOUL CALUMNIES: *S. G. L.* We share your abhorrence of the foul and filthy imputations indulged in by some of our continental neighbours, but we do not think your proposal to boycott German seedsmen is practicable. In the first place, they are not personally responsible for the malicious inventions of some of their countrymen; their interests, indeed, lie in the maintenance of good relations; and next, you could not prevent our wholesale dealers from receiving, as they do now, a large proportion of their stock from the Continent.

GARDENERS IN THE UNITED STATES OF AMERICA: *A. E. W.* We would invite you to consider the matter in the light of the statements contained in a letter in our present issue. We should imagine that the chances of success as a gardener are as good in Canada as in the U.S.A., with the advantages of your continuing a British subject.

LICHEN ON LAWN: *H. V.* We should think the lawn requires draining. Next spring apply a dressing of nitrate of soda or other fertiliser to encourage the grass. Spud out the patches, and replace with fresh turf.

MAZE: *R. D.* *Thuja occidentalis*, the common Yew, and Whitethorn, form excellent hedges, The evergreens being the more suitable.

MYRSIPHYLLUM (MEDEOLA) ASPARAGOIDES: *T. S.* We were not previously aware that this plant was hardy so far north as Aberdeenshire. If such is actually the case, we have another handsome climber for warm outside walls. Usually gardeners afford the plant greenhouse treatment.

NAMES OF PLANTS: *Vanda*. *Oncidium Cebolleti*, often called *O. juncifolium*.—*J. W. E.* 1, *Epiphyllum Russellianum*; 2, *Begonia sub-peltata nigro-rubra*.—*A. F.*, *Tottenham*. The hybrid you send a flower of has been named *Cypripedium Kauffmannianum*.—*G. S.* 1, *Kalmia latifolia*; 2, *Andromeda japonica*;

3, *Andromeda floribunda*. The Violets are excellent.—*G. P.* *Eria vittata*.

PEARS DECAYING: *J. T.* The cracking was caused by a fungus, *Fusicladium dendriticum*, and decay followed. The decayed fruit was then attacked by a mould, *Monilia fructigena*.

POTATO DISEASED: *T. R.* The tubers are almost destroyed by *Peronospora infestans*—Potato-rot; and the "grubs" are those of *Julus*, or centipedes, creatures that feed on decaying vegetable matter. Turn out the clamp, remove all diseased tubers and burn them, making a clamp in a fresh place.

SCALE ON PALM: *C. B.* Evidently a scale insect, about which we will tell you more next week. Soft-soap and tobacco would form a good application.

SEAKALE: *J. K.* The roots are attacked by slime fungus, such as causes club in Cabbages. Destroy the plants by fire, and place new plants in fresh soil.

THE GAS TAR MIXTURE FOR KILLING MEALY-BUG ON VINES: *T. H.* It should be applied in a warm state with a stiff brush, after having thoroughly brushed the rougher parts of the stems, or rubbed off the outermost coat of rough bark. No metal instrument should be employed in doing this. There is no need to coat the buds with the mixture, as it is not about them that mealy-bug is found, but in the crevices and angles. To make as good a job of it as possible, the soil should be skimmed off with a spade to a depth of 2 inches, taken out of theinery, and buried in any open trenches on land in the course of being trenched. Then the walls should be scrubbed and washed, all nail-holes and open courses between the bricks filled in with mortar, the whole being washed with hot lime-wash, in which 2 lb. of flowers-of-sulphur per paifal have been mixed. The hot-water pipes should then come in for a thorough cleansing. This course of treatment must be continued for a year or two, and every bug seen touched with methylated spirits.

TREE PROTECTIVE COMPOSITION: *H. H.* A trustworthy one is Ahlbottn's, sold in 56 lb. casks by the maker, 21, St. Andrew Square, Edinburgh.

VITIS VOINIERIANA. Mr. Watson points out that this plant was mentioned in the *Gardeners' Chronicle*, August, 1897, p. 147, and in the Appendix II. of the *Kew Bulletin*, 1898. Large plants of it exist at Kew.

COMMUNICATIONS RECEIVED.—*N. E. Br.*—General C. B. L. S., next week if possible—*H. Weir*—*F. W. B.*—*M. C. C.*—*W. G. G.*—*D. R. W.*—The Director, Sydney Botanic Garden—The Director, Jardin des Plantes, Paris—*S. G. L.*—*G. E. S.*—*S. W.*—*J. O'B.*—*S. A.*—*W. W.*—*A. H.*—*J. B.*—*W. J. C.*—*G. W.*—*S. W. F.*—*A. F.*—*J. M.*—*J. I.*—*T. H.*—*J. Murray*—*Dr. B.*—*D. McD.*—*H. T. M.*—*J. J. W.*—*A. H.*—*E. C.*—*W. J. B.*—*G. Higgins*.—*H. J.*—*G. O.*—*R. W.*—*H. D.*—*G. M. W.*, Glasgow.—*G. P. S.*—*Mrs. Ross*, Firenze.—*W. T.*—*R. L. H.*, Edinburgh.—*Mrs. B.*, Woodseats.

GARDENING APPOINTMENTS.

MR. GEO. SMITH, until recently Gardener at Wroxton Abbey, Baubury, as Head Gardener to His Grace the Duke of WELLINGTON, Ewhurst Park, Basingstoke, Hampshire.

MR. E. SNEEGROVE, Gardener to General Lord A. G. RUSSELL, until recently at Ewhurst Park, has gone as Gardener to his Lordship, Uckfield House, Uckfield, Sussex.

MR. A. EDWARDS, for two years Gardener at Woodfield Gardens, Streatham, as Head Gardener to H. STEEL, Esq., Tipton Court, Sheffield.

MR. W. STEPHENS, late of Chorley Wood House Gardens, has been appointed Gardener to Lord CHESHAM, Latimers, Bucks, succeeding G. NEVILLE, deceased.

MR. WILLIAM DYER, as Head Gardener to H. LIVESEY, Esq., Trulls Hatch, Rotherfield, Sussex.

MR. F. W. RICH, for the last three years Gardener at Darwin Bank, Torquay, and previously at Welfield, Bulth Wells, Breconshire, as Head Gardener to Mrs. BAINBRIDGE, Eldfordleigh, Plympton, Devonshire.

MR. ALEXANDER DRYDEN, until lately Gardener at West Green Manor, Hants, as Gardener to Major AVERSTON, Evercrech House, Evercrech, Somersetshire.

MR. JOSEPH TAYLOR, for the last ten years Foreman in the gardens at Claverton Manor, Bath, as Head Gardener to E. H. SKRINE, Esq., Inwoods, Monkton Farleigh, Bradford-on-Avon.

MR. ALEXANDER MCLEAN, late of Dunleckney Manor, Bagenalstown, co. Carlow, as Gardener to M. H. FRANKS, Esq., Garretstown, Ballinspittle, co. Cork.



JAPANESE MAPLE AT CASTLEWELLAN.

THE

Gardeners' Chronicle

No. 787.—SATURDAY, JAN. 25, 1902.

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LOOKING BACKWARD.

I HAVE recently had occasion to turn up the pages of the *Transactions of the National Floricultural Society*, the forerunner of the Floral Committee of the Royal Horticultural Society. The formation of this Society grew out of the necessity for establishing an authoritative tribunal to deal with novelties in florist's flowers, which were at that time becoming very popular, and being rapidly increased. It was a time of considerable friction in floricultural circles. George Glenny, who began to write about florist's flowers in 1832, was a strong force in matters floricultural, but there was a considerable revolt on the part of florists against his leadership, and it was to give substance and organisation to this revolt that the formation of the National Floricultural Society was brought about. In the *Horticultural Journal*, published during the thirties, Glenny inserted violent articles against Joseph Paxton, and Thomas Hogg of Paddington, in particular; he was always in the thick of controversy, and when the National Floricultural Society was established, he attacked its leaders with great violence. The founders of the N. F. S. held that it was urgently necessary that new florists' flowers should be submitted to the opinion of competent judges; varieties had been sent out as first-class properties which when grown proved to be inferior, and this was generally owing to certificates being granted

by censors having but a limited knowledge of the varieties already in cultivation. In consequence, the National Floricultural Society was founded and supported by an influential combination of traders and amateurs, who wished to see a general Society formed, which, by the exercise of strictness and impartiality, should be a recognised authority enjoying public confidence, and competent to take cognisance of any novelties which might be submitted to it.

The Society was formed in March, 1851. Its President was Mr. Edmund Foster, of Clewer Manor, an influential country gentleman of means, who was also then engaged in the improvement of the show *Pelargonium*. There were six Vice-Presidents, viz., Dr. Lindley, the Rev. Chas. Fellowes, and Messrs. J. H. Brown, R. Marnock, C. B. Warner, and J. Wilmore, a prominent cultivator of Tulips at Old Ford, when it was a site of pleasant gardens. A committee of thirty-nine persons was instituted, and it included such names as E. Beck, E. S. Dodwell, J. Gaines, R. Glendinning, R. Headly, Andrew Henderson, J. Keynes, J. E. Lane, C. Lee, Dr. Maclean, W. Paul, T. Rivers, J. Salter, C. Turner, and J. Veitch. Mr. Arthur Henderson, of the Pineapple Place Nursery, was the Treasurer; and Mr. John Edwards, the Secretary. The latter occupied somewhat a unique position among London florists: he was in business in Clerkenwell as a catgut manufacturer, and resided at Wall Cottage, Holloway, where he grew Tulips, Auriculas, &c.

The whole force of Glenny's wrath was poured on the head of John Edwards. Edwards contributed papers to the *Gardeners' Chronicle* on "Florists' Flowers," and was a leading writer on the staff of *The Florist*, which Mr. C. Turner at that time had just commenced to edit. He was also the founder of the *National Garden Almanack*, the first edition of which appeared in 1853. Of all the leading florists who formed the first committee only the veteran William Paul survives. He was also one of the first thirty censors appointed to make awards to novelties, and of these he is the sole survivor. It may be stated that at the end of 1857 Mr. Edwards retired from the secretaryship, and the writer was appointed to that office, and held it until the end of 1859.

For the best part of its existence the meetings of the N.F.S. were held in the rooms of the Royal Horticultural Society, at 21, Regent Street; then they were moved for a time to St. Martin's Hall, Long Acre; but finally were again held at 21, Regent Street, until the period of dissolution of the Society at the end of 1859.

The operations of the Society were carried on in a methodical and complete manner; subjects submitted for Awards were staged by noon, and then from six to twelve specially-summoned censors set about examining the subjects and making the awards. The latter were three in number, viz., a First-class Certificate of Merit, awarded only to productions of a very superior character; a Certificate of Merit to all subjects possessing sufficient excellence; and a Label of Commendation which was affixed to all subjects of a promising character, but not deemed worthy of the higher Awards. In every case where an Award was made a schedule of properties was filled up. Here are the particulars of a very popular show *Pelargonium* named Magnet, raised and exhibited by Mr. G. W. Hoyle, of Reading: colour high scarlet-crimson, violet centre, large black blotch raying towards the margin on a scarlet-

crimson ground, but lighter on the edges, profuse, striking, and constant; it received a First-class Certificate. In the case of a *Cinoraria*, more particulars were adduced; in the case of one named Orpheus, the description runs: "form and truss, good; colour, dull lilac-purple; disc, light; habit, dwarf and compact; size, average." This was shown by Mr. W. P. Ayres, then a nurseryman at Blackheath. These schedules were retained by the Secretary for publication in the *Transactions of the Society*. It would be well if some such schedule could be filled in of the properties of all subjects receiving awards at the meetings of the Royal Horticultural Society. It might prove a desirable improvement upon the somewhat haphazard method now in operation at the Drill Hall.

In consequence of an announcement made by the Council of the Royal Botanic Society that it was their intention to form a body specially to deal with new florists' flowers, and also an announcement by the Council of the Royal Horticultural that it was their intention to form a Floral Committee on the same lines as their Fruit Committee, it was deemed inexpedient to continue the National Floricultural Society; consequently its dissolution was resolved upon, and took place on the occasion of the eighth annual meeting on March 3, 1859. Mr. Richard Stains, Harewood Square, was the treasurer of the Society at the time, and all the books and papers were committed to his care. Mr. Stains died many years ago, and probably the books, &c., have all been destroyed. Mr. Stains, who was the proprietor of the Yorkshire Stingo Brewery in the Marylebone Road, was a keen florist, and invariably acted as one of the censors of new florists' flowers at the exhibitions of the Royal Botanic Society with Mr. Thomas Moore, Mr. Anthony Parsons, and Mr. F. R. Kinghorn.

I have the whole of the *Transactions of the National Floricultural Society* bound up in two volumes, and they are very interesting reading, especially to anyone who has contemporary knowledge of the operations of the Society. It is well at the beginning of a new century to recall some of the horticultural doings of the past half of that which has just closed. They have an interest reaching beyond the past and present generations. The methods of our forefathers are always interesting to examine, and much may be learned from them by those who do not regard such doings in the past as altogether devoid of advantage and instruction. R. Dean.

[It may be worth recalling that the violent vituperations indulged in by Glenny were largely instrumental in causing the foundation of the *Gardeners' Chronicle*. Ed.]

CULTURAL MEMORANDUM.

EARLY PEAS, &c.

As the subject of Peas is now engaging attention, I should like to give my method of securing them; it entails but little more trouble to those who are in the habit of sowing dwarf varieties under a wall, and who have the command of glass. Let the seed be sown as usual, a few inches distant from the foot of a south wall, and cover the seed with leaf-mould, and lay sheets of glass slantingwise against the wall, pressing the lower edges slightly into the soil. A cord drawn tense along the front of the glass, and fixed to a nail at either end, will keep the whole secure against wind. Even earlier pickings may be had by sowing thinly, and afterwards fixing the haulm to the wall or to stakes. In

severe weather it is an easy matter to give protection, but so long as the plants are free of the glass they will stand 10° of frost after a bright day without injury. It will be necessary to remove the glass at intervals during bright weather in order to apply water, and to damp the plants overhead, in order to keep them free of insects; care should be taken to do this early enough in the day to allow of the foliage getting dry before night-fall. Peas grown under these conditions are dwarf and sturdy, and do not suffer any sort of check; this is one advantage gained over those reared indoors, and transplanted to the open air.

Many other plants, besides the early Peas, can be forwarded in this manner. Last year, we tried it on a row of Strawberries, growing along a south border. Boards, standing on edge, and lightly nailed to short posts, took the place of a wall; a narrow strip of wood was tacked on to the boards on the inside, near the top, to carry the glass. If a front board is used, it should be narrow enough to allow the sun to reach the plants. A sheet of glass can be drawn back here and there when necessary, in order to admit the air. As time goes on, the posts can be drawn slightly out of ground to give more air and head-room, and the front board replaced by inverted flower-pots to carry the glass. In this way we were able to pick ripe fruit at least fourteen days in advance of the row immediately in front, which doubtless also received some benefit from the shelter; the variety was Royal Sovereign, but I am not sure but what a less strong growing variety would have been earlier. In the later stages time was lost, owing to the foliage shading the flowers and fruit. *James Baxter, South Hants.*

STRAWBERRY FORCING.

For the earliest supply some gardeners introduce the first batch of plants into heat in the first week of November, and although some of the plants may fruit fairly well, there are, as a rule, a great number which fail to throw up the spikes satisfactorily, and some not at all. From the last week of December and onwards, batches of plants may be brought under glass at intervals according to requirements and accommodation with better results; and it may be taken as a fixed rule that 100 plants put into the forcing-house before the new year will not carry so much fruit as fifty plants after that date. For the first crop I still adhere to Vicomtesse Héricart du Thury, which, all points considered, appears to be the best early variety; and it is not liable to be attacked by mildew and red-spider, whilst it fruits abundantly, and the fruit is of good colour and passable for flavour.

To follow this are Royal Sovereign and Sir Joseph Paxton, President, and Sir Charles Napier. No Strawberry should be put into heat till the pots have been cleansed, and the soil stirred up and top-dressed with moderately dry loam. *H. Markham.*

A VISIT TO THE NORTH.—X.

(Continued from vol. xxx., p. 433.)

EDINBURGH BOTANIC GARDEN.

THE history of botanic gardens in Edinburgh commences in the year 1670, when "a portion of the Royal Garden around Holyrood House was occupied by two eminent Edinburgh physicians, Andrew Balfour and Robert Sibbald, for the making of a physic garden, and James Sutherland was appointed to the 'care of the garden.'"

Accepting this as the foundation of the Royal Botanic Garden of Edinburgh, it is the

oldest but one in the United Kingdom, the exception being that at Oxford, founded in 1632. The same physicians acquired in 1676 from the Town Council a lease of the garden of Trinity Hospital and adjacent ground for the purpose of a physic garden, and they appointed the same James Sutherland to be "intendant" of this garden. About 1702, says an official publication, another botanic garden for the College was established. Thus in the early years of the eighteenth century, there were in Edinburgh no fewer than three distinct botanic or physic gardens.

James Sutherland gave instruction in botany in the Royal Gardens from the very first, and being appointed Botanist to the King in Scotland, established "a profession of botany" there. Later he was appointed by the Town Council Professor in the town's college, now the University of Edinburgh. In 1706, Sutherland resigned his care of the Town's and College Gardens, and his Professorship in the University, but remaining King's Botanist, retained the care of the Royal Garden. When Charles Preston was appointed his successor by the Town Council, there were thus established rival gardens and rival Professors of Botany. Sutherland died in 1712, and was succeeded in the offices of King's Botanist, Keeper of the Royal Garden, and Regius Professor of Botany by William Arthur, Charles Alston succeeding to the same offices in 1716.

In 1724 the College Garden was turned to other uses, and five years later Charles Alston was appointed to the charge of the Town's Garden, and as Professor of Botany in the University. Through Alston, therefore, the Royal Garden and the Town's Garden were again under one keeper, who combined the Professorships of Botany also. They have happily continued so ever since.

In 1763 John Hope, who had succeeded Alston in 1761, proposed to combine the two gardens by transferring both to a site, 5 acres in extent, on the north side of Leith Walk, below that now occupied by Haddington Place.

In 1820, when Robert Graham was Regius Keeper, steps were taken to again remove the garden to the Inverleith property it now occupies, and 14 acres of the field or park of Inverleith were purchased by the Exchequer, the lease of the Leith Walk ground being sold. All the plants had been transferred to the new garden by 1823. In 1858, when John Hutton Balfour was Regius Keeper, a further addition was made by purchase from the proprietor of Inverleith of a narrow belt of two-and-a-half acres on the west side; and in 1865 the Caledonian Horticultural Society having resigned to the Crown its lease of the ten acres of the adjoining ground, which it had occupied since 1824 as an experimental garden, this ground was made part of the Botanic Garden. In 1876 the Town Council purchased from the Fettes Trustees twenty-seven and three-quarter acres of the Inverleith property on the west side of the garden, and transferred it to the Crown for the purpose of making an arboretum in connection with the garden, the Crown at the same time purchasing Inverleith House and two-and-a-half acres of additional ground. The present area—some fifty-seven acres—was thus completed, and as the garden is now surrounded by public roads, no further extension on the site is possible.

John Hugh Balfour died in 1879, and was succeeded by Alexander Dickson, who died in 1887. The present Regius Keeper is Professor Isaac Bayley Balfour, M.D., M.A., F.R.S., who has increased the reputation of the garden as a teaching establishment, and at the same

time has maintained it in such a manner that the people of Edinburgh find there many of the features of a pleasure garden. So far, indeed, as the visitor may see, the management of the Edinburgh Botanic Garden is similar to that practised at the larger and more important one at Kew, where the difficult task of making a garden, which exists primarily for scientific purposes, an enjoyable *rendezvous* for the multitude is carried out with gratifying success.

I approached the garden in Edinburgh from the entrance in Inverleith Row, very near to which are several interesting trees with labels attached, describing by whom and when they were planted. *Sequoia gigantea* was planted by Professor Christison in 1861, and a Cedar near to the Students' Garden is a memorial of the King's visit to the Gardens when Prince of Wales. A label upon *Quercus conferta* describes its planter as having been Dr. Maxwell T. Masters, F.R.S., and the date of the ceremony July 13, 1875. The tree is now about 35 ft. high, and probably 25 ft. through the branches. It is a prettier, better-shaped specimen than another of the same species planted half-a-dozen years later by the late Duke of Edinburgh. Dr. Masters contributed a paper on the botanical history of this tree to the *Transactions of the Botanical Society of Edinburgh*, on January 13, 1876. A tree of *Quercus palustris*, with fine plants of *Mistletoe* growing upon it, is worthy of remark, as the species is not often seen to be a host to this pretty parasite.

The herbaceous or students' garden in which the plants are grouped together in their natural orders, as at Kew, is just under the terrace on which the newer range of glass-houses stands. At the time of my visit, the beds were scrupulously neat, and being cut out of a closely mown, rich and verdant lawn, they appeared much smarter than this part of a botanic garden is usually maintained. On the terrace already mentioned the groups of heather were in bloom, and made a better show than we can get in the south from similar plants. Conspicuous amongst these were the following, *E. cinerea* var. *atro-purpurea*, *E. Tetralix*, the cross-leaved Heath in a variety named *Lawsoniana*; *E. ciliaris*, a showy species with the flowers produced at the end of the shoots; and *Daboecia polifolia* var. *bicolor*, some of the flowers of which were purple, and others white. The numerous varieties of the common Ling (*Calluna vulgaris*) included *Alporti*, very free, about 2 feet high; *argentea*, *alba*, *tomentosa alba*, 2½ feet high; *Drummondii*, &c. A bed filled with *Pieris japonica* variegata among those containing Heaths had a pleasing effect. The collection of *Rhododendrons* is appropriately near to the plants already mentioned.

The rock-garden was formed, I believe, by the late Jas. McNab, and is upon the highest portion of the grounds. At the same time the plants are sheltered, for most of the ground falls to the north, and upon this side there are protective trees. This garden is one of the most interesting features, and affords greater variety of aspect and conditions for the numerous species of plants than do most rockeries. I took notes of a number of interesting plants it contained, but it will suffice to mention a very few of the most prominent. *Rose Wichuriana* covered a bank densely, and was very fine; *R. alpina* var. *pyrenaica* was extremely pretty, because of the numerous elongated fruits it bore; the shrubby *Veronicas* succeed very well, and I was rather surprised to notice *Choisya ternata* growing finely in an exposed position so far north. The species of *Ericaceae* generally succeed in the neighbourhood of Edinburgh,

and the Order is richly represented in the rockery. I noticed *Celmisia spectabilis*, *Lithospermum prostratum* in considerable quantity and excellent condition; *Rhododendron ferrugineum*, *R. latifolia*, *R. amoena*, a fine collection of *Saxifragaceae*, great masses of *Alyssum*, and the interesting *Acaena microphylla* (*Rosaceae*), remarkable for its small, green flowers, inconspicuous in themselves, but furnished with long, showy crimson spines. It is a very dwarf (1 to 2 inches high) New Zealand evergreen of cushion-like growth, and peculiarly suitable for the rockery. There is a water garden, and large arboretum; but there was insufficient time to make so close an inspection of the latter as I could have wished.

THE GLASSHOUSES.

A very convenient and admirable range of houses was built a few years ago, and in these there is a large and useful collection of plants. The *Nepenthes*-house was particularly attractive. It is a span-roofed structure, and Mr. R. L. Harrow, who has charge of the indoor department, has planted-out some of the species. These have made very strong growths, which are tied near to the rafters, and bore numerous "pitchers." The house was very well filled with plants in baskets also, including hybrids such as *N. Chelsoni*, *Mastersoniana*, *Balfourii*, *Dicksoniana*, *N. × mixta*, &c. *N. Burkei* excellens and *N. cylindrica* had succeeded splendidly when planted out, but the work had been done only a year or so, and it will be interesting to hear if they continue to succeed. A plant of the handsome *Anthurium Veitchii* was remarkable, and a climbing plant, *Pergularia odoratissima*, with strongly-perfumed, greenish-yellow flowers.

A new *Hibiscus* (*H. Scottii*, figured in the January number of the *Botanical Magazine*, t. 7816) was in bloom in a house containing *Rhododendrons*, &c. It is a *Socotran* plant, with rich yellow flowers, bearing dark-coloured markings at the base; but the flowers were almost closed at the time—the plant was 8 feet high. In the propagating-house the rare *Adiantum Balfourii* was shown to me; it is a pinnate fern, the fronds 9 inches long, and the pinnae broad, with fringed margins—a very pretty plant. In the porch, *Solanum Rantonnetii* was growing very freely; *Passiflora edulis* was well fruited; *Solanum Wendlandi*, that grand species, bore excellent trusses of flowers; *Tecoma Smithii*, was in flower and fruit; *Mackaya Bella* in flower, &c.

In the Orchid-houses I saw some very fine plants of *Cattleya citrina*, and the pseudobulbs become larger each year, an experience not common with this plant. There is a large greenhouse, and in this I saw a specimen of *Restio subverticillatus*, which I should judge to be the largest in the country, being about 12 feet through.

The Palm-house contained some fine specimens *Macrozamia* planted out, *Dioon spinulosum*, *Euccephalartos horridus*, the rare *E. Ghellinckii*, and others; *Sabal umbraculifera*, an old plant, brought from the Botanic Garden at Leith Walk, &c. The old Palm-house, now used as a "temperate" house, is about 70 feet high. A plant of *Scaevola elegans* reaches within 20 feet of the top. There are capital plants of *Livistona chinensis*, *L. australis*, Tree Ferns, tender *Conifers*, *Cocos flexuosa* 30 feet high, and *Bacularia (Areca) monostachya*, 10 feet high. *Fagus betuloides*, with its tiny leaves, is an interesting evergreen species of the Beech.

The course of lectures delivered at the garden is spread over three years, and the members of the staff have a reading-room and

library provided for them. Occasionally there are lectures by Prof. Balfour that are open to the public, any of whom, if engaged in the study of botany, may obtain the use of the laboratories. The students at the University receive their instruction in botany at the Botanic Garden, which is open to the public as early as 8 o'clock each morning except Sunday, and then at 11 A.M.

There are but three Botanic Gardens in the Kingdom maintained by the State. Edinburgh is one of them, and the others are those at Kew and Glasnevin (Ireland). They are all perfectly worthy of this maintenance, for each is a centre of botanical and horticultural teaching and activity. P.

(To be concluded.)

NOVELTIES OF 1901.

(Concluded from p. 22.)

REFERENCE to the appended list of new or rare plants illustrated in the *Gardeners' Chronicle* during the past year, will show that an unusual number of interesting plants have been produced or specially called attention to during the past year. Reference to notes of the Royal Horticultural Society's shows proves that the eminent firms of Messrs. Sutton & Son, Veitch, Cannell, Webb, Carter, &c., have been successful in improving numerous florists' flowers, in shape and beauty of the flowers, as in *Gloxinias*, *Begonias*, *Chrysanthemums*, *Pelargoniums*, *Cyclamens*, *Primulas*, and others.

Messrs. Jas. Veitch & Sons, Chelsea, have for many years past turned their attention to the introduction of hardy trees and shrubs, have had further successes in that direction, and the assurance of many more in the near future. Their fine strain of greenhouse *Rhododendrons* have been added to the winter-flowering *Begonias*; *B. Ideala* and *B. Agatha* have been certificated. The *Nepenthes*, for which the firm is famed, still improve; and the extraordinary *N. ventricosa* was certificated. Among flowering shrubs, *Berberis congestiflora hakeoides* and *Cyrtilla racemiflora* have both been illustrated in our pages; the Veitch strain of *Streptocarpus* has increased in the size of the flowers, and some new colours have been obtained; the *Cacti*, a fine collection of which was staged at the Temple Show, produced a new set; and the great Veitchian specialty, the *Hippeastrums*, have been as successful as ever in the past year, three of the best certificated being *Averuncius*, *Marathon*, and *Rialto*.

Captain Holford, Westonbirt, whose gardener is Mr. A. Chapman, holds the amateurs' record for fine *Hippeastrums*, or *Amaryllis* as they are more commonly called. The Westonbirt collection of *Amaryllis* is the oldest in the country. Hard on fifty years ago, the late Robert Stayner Holford got together a fine collection of them, and the raising of new varieties was carefully pursued. *A. Aekermani pulcherrima*, that fine dark blood-red old species, now probably extinct, was much used as a breeder, and from that day to this the Westonbirt collection has been well first for dark red and crimson self flowers. Those who saw the fine group for which Captain Holford was awarded a Silver-gilt Flora Medal by the Royal Horticultural Society, on March 26 last year, will readily recall their excellence. The best of his certificated varieties were *Lois*, *Lord Borington*, and *Clovelly*, all grand flowers.

Leopold de Rothschild, Esq. (gr., Mr. Hudson), who has been so successful with *Nymphaeas*, has continued the culture of water

plants by growing equally well a fine lot of *Nelumbiums*, of which the double white *N. album plenum*; the double rose *N. roseum plenum*; and the new Japanese, *N. Kinshirin*, were certificated. The typical *N. speciosum* and its varieties, and the yellow *N. luteum*, also flowered at Gunnersbury—the latter making quite a feature in the new Japanese garden.

Messrs. F. Sander & Co., of St. Albans and Bruges, seem to cultivate decorative plants more extensively each year. Palms form a very large feature, and of the favourite *Kentias* at the Bruges exhibition they showed forty-seven distinct species and varieties, the varieties of course predominating, and including golden-leaved, variegated, and dwarf forms. The trouble is, that each of these distinct forms cannot be increased by propagation in a reasonable time.

Camellias and *Azaleas* at the Bruges establishment have produced some fine new forms, and their culture by a firm conversant with the requirements of British gardens has caused the *Camellias* in bud especially, it is said, to again find favour in this country. The new section of decorative *Caladiums* between *C. albanense*, *C. venosum*, and the best of the garden forms, resulted in a new set: *C. W. Lauche*; *C. l'ami Schwartz*; *C. Countess of Warwick*; *C. Mrs. Oliver Ames*; *C. Lord Annesley*; *C. Mrs. Miller Mundy*; *C. Mrs. H. L. Bischoffshcim*; and *C. A. Siebert*.

Among new Palms distinct in appearance though not easy to determine botanically, Messrs. Sander have *Livistona Woodfordi*, *Arenga Engleri*, and *Linospadix Leopoldi*; and of other plants *Euccephalartos Barteri*, *Carludovica Leopoldi*, *Ficus pandurata*, and *Nepenthes mixta*, Sander's variety.

Lilies were brought prominently into notice during 1901 by the Conference at Chiswick, at which Messrs. Wallace & Co., of Colechester, were the principal exhibitors, some of the best being illustrated in the *Gardeners' Chronicle*. Sweet Peas were equally happily exploited.

Chrysanthemums, *Roses*, *Carnations*, *Dahlias*, and the other large classes of florists' flowers have each been worthily replenished by the many diligent workers among them; and hardy flowers by the endeavours of Messrs. Kelway of Langport, Mr. Ware, Mr. Perry, Messrs. Barr & Son, and others have been recruited by novelties, and their varieties, new and old, have made perhaps more continuous displays at the Royal Horticultural Society's shows than any other class of plants.

Two charming sections have been brought out prominently during the past year, viz., *Irises*, and the charming new hybrid *Narcissus*, enumerated under the popular name *Daffodils*, raised by the Rev. G. H. Engleheart. Miss Willmott, of Warley Place, Essex, a sincere lover of plants of all kinds, secured awards in both classes, among them being *Daffodil Allen's Beauty*, *D. Robert Berkeley*, *D. Earl Gray*, *D. Elaine*, *D. Dorothy Wemyss*, *Iris Willmottiana*, and others, which will be found in the appended list of plants illustrated.

The certificated varieties are mostly of the Rev. G. H. Engleheart's raising, and among those for which he received awards were *Daffodil St. Cecilia* and *D. Florence*, two fine things of the *Ajax* group; *D. Herrick*, of the poetical class; and *D. Master-at-Arms*, a bicolor; *D. Aftermath*, *D. Spenser*, *D. Day Star*, *D. Sea Bird*, *D. Rear Guard*, and *D. Amber*, all valuable additions to this really beautiful and useful class of flowers for which the Rev. Mr. Engleheart has done so much to develop.

Other good certificated *Daffodils* were *D. General Roberts*, shown by Messrs. Barr &

Son in their group on April 23, which secured a Silver-gilt Flora Medal, and in which the fine Daffodil *Lucifer* was so well represented; *D. Stella superba*, of Mr. Walter Ware; and *D. Moonbeam*, of Mr. R. Backhouse.

The following novelties and rare plants have been illustrated in the *Gardeners' Chronicle* in 1901:—

- Adonis amurensis*, March 16, p. 175.
Agapetes macrantha, January 19, p. 47.
Allium Erdelii, May 4, p. 287.
Aloe Lynchi, March 30, p. 199.
Anthurium Bakeri, January 5, p. 2.
Aretotis Gumbletoni, September 7, p. 179.
Aretotis decurrens, April 6, p. 214.
Aretotis stœchadifolia, August 10, p. 109.
Berberis congestiflora var. *hakcoides*, May 11, p. 295.
Brodiaea crocea, August 17, p. 127.
Canna Kate Gray, Supplement, Sept. 21.
Cereus Wittii, January 19, p. 38.
Ceropegia debilis, April 13, p. 238.
Chamærops humilis "Birroo," Nov. 23, p. 371.
Chrysanthemum Queen Alexandra, Nov. 16, p. 357.
Clematis brachiata, November 23, p. 367.
Cocos Yatay, November 23, p. 370.
Colchicum hydrophyllum, February 16, p. 102.
Coleus thyrsoides, January 19, p. 46.
Cyrrilla racemiflora, September 14, p. 199.
Delphinium Dorothy Daniel, Aug. 17, p. 139.
Delphinium William Kelway, Aug. 17, p. 139.
Dianthus ×, May 18, p. 311.
Dianthus pelviformis, August 3, p. 97.
Diascia Barbere, October 12, p. 278.
Dracontium gigas, February 23, p. 126.
Erigeron Coulteri, August 3, p. 99.
Eupatorium petiolare, June 15, p. 379.
Hæmanthus mirabilis, Supplement, May 25.
Hæmanthus Linden's New, Supplement, August 10.
Hoheria populnea, Supplement, Nov. 23.
Hyacinthus lineatus, February 16, p. 103.
Impatiens grandiflora, February 16, p. 111.
Iris paradoxa var. *Choschab*, February 16, p. 104.
Iris Sindpers, February 16, p. 105.
Iris, new hybrid, Supplement, November 30.
Iris Paraver, June 22, p. 298.
Iris Alkmene, June 22, p. 299.
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THE CULTIVATION OF EPACRIS.

Of all hard-wooded winter-flowering plants, there are possibly none so useful or graceful as the New Holland shrubs called *Epacris*. Failure in the culture of these plants I attribute to three causes, viz., 1, lack of air; 2, loose potting; and 3, the too hard cutting-back of plants after flowering. Of the three, the last-named is the commonest error. I know but too well that many very successful growers cut their plants hard back after flowering, and they succeed well after this treatment; but I have found them succeed best without this barbarous method.

Epacris are usually propagated by cuttings of the tops of the shoots, about an inch long; these should be inserted in pots of silver-sand, and put in a forcing-house under a bell glass, or in a hotbed, air being gradually given as soon as the cuttings have rooted. I have, however, found layering to be the best method of multiplication, and whatever others have to say to the contrary, I always manage to root them by this method, whereas scores upon scores of cuttings have failed by damping.

Fill thumb-pots with a compost of peat and sand, care being taken to have a preponderance of sand on the surface for the layers to root into. Place the plant to be propagated on a hard surface in the greenhouse or elsewhere, bend down the lower shoots, cut a notch in them similar to that made in Carnation-layering, and peg them down in the pots with a piece of wire or wooden layering-pin, and draw the sand round the layer, giving the plants a gentle watering with a fine rose. Place the plants where they may remain undisturbed until they are rooted, which will probably be in six or seven weeks.

When well rooted, cut the connection between the old plant carefully, and remove the young one on to a shelf near the glass; afford water carefully, and see to its various requirements daily. In about a month after this, shift the plant into a $3\frac{1}{2}$ -inch pot, using peat and sand in equal proportions. Crock the pot carefully and well, place some rough peat over the drainage to prevent the finer particles of soil being washed through; be careful and pot firmly, loose potting is a prelude to failure. Press the compost all round the ball of the plant so as to make it quite firm and close. Afterwards remove the plant on to a stage in a cool house, still keeping it near the glass. Apply water carefully, but not fire-heat unless the weather is extremely cold. The following spring, if the plant has rooted well, pinch out the top in order to cause side shoots to form; and in about six weeks after this, when the plant has started to grow once more, shake it out of its pot, and shift into a 5-inch one, employing the same soil as before. In summer, remove the plants to a cold frame, and let them remain there until the end of September, when they should be placed in the cool green-

house; if they have rooted well, a weak application of liquid-manure may be afforded occasionally until they commence to flower.

Treatment of Old Plants.—Never shift the plants into larger pots until they are well rooted; when the plants get large, they will continue in good health for three or four years without shifting, and yet flower well, provided they are occasionally fed with weak liquid-manure. Frequent shifting is not requisite, unless young plants are required as specimens. The proper season for a general shifting is any time from March to August, although upon extraordinary occasions, as the breaking of a pot for instance, they may be shifted with safety at any other time. When potting, provide ample drainage, and press or ram the soil firmly. Some growers raise the centre of the ball 3 or 4 inches above the sides of the pot, their intention being to prevent the roots from being injured by an excess of water, for if by chance the plant does get an over-supply, it can only be round the outside of the pot and at the extremity of the roots; the upper part of the old ball of earth and the stem being so much higher, that the water runs down to the edge of the pot, and the quantity of drainage-material below always keeps the plant from suffering from an over-abundance of water. For my own part, I consider this precaution unnecessary, for provided the plants are healthy, and the application of water is in careful hands, no mischief will accrue from the ordinary potting. After potting, remove the plants to the greenhouse for a time, afterwards place them in a cold frame for the summer; syringe them occasionally, which will serve to keep down thrips.

As soon as the plants have finished flowering, cut back the stronger growths, but leave the weaker shoots at full length. Some cultivators cut all the growths back, but I must confess that, after a trial of the two methods, I find the former practice yields the better result. I do not want to criticise other grower's methods, nor, on the other hand, do I want anyone whose plants do well to follow my rules; but for those who fail to get a maximum quantity of flower, my method of procedure will be found beneficial. Let the plants be syringed daily until the new growths break, afterwards let the treatment be that previously advised.

To recapitulate, the following rules should be carefully followed:—

1. In propagating, employ layering instead of propagation by means of cuttings.
2. Do not shift into larger pots until the plants are pot-bound.
3. Afford an abundance of air, but fire-heat only when the weather is extremely cold.
4. Water with great care.
5. Cut back only the stronger shoots after flowering, but leave the others at full length.

The following is a good selection of varieties:—*autumnalis*, red and white; *Devoniana*, scarlet; *Eclipse*, crimson and white; *Mont Blanc*, white-lemon; *The Bride*, white; *Sunset*, pink; *Vesuvius*, crimson and scarlet; *alba odorata*, white, fragrant; *pulehella major*, white. *John Denman*, *Brynbella*, *Tremurchion*, *St. Asaph*.

VEGETABLES.

HAMPEL'S IMPROVED YELLOW FRAME-FORCING LETTUCE.

THIS excellent variety of Cabbage-Lettuce is highly spoken of by German gardeners as being one of the earliest Lettuces for hot-bed culture, and one of the best autumn varieties in disused hot-beds under frames late in the

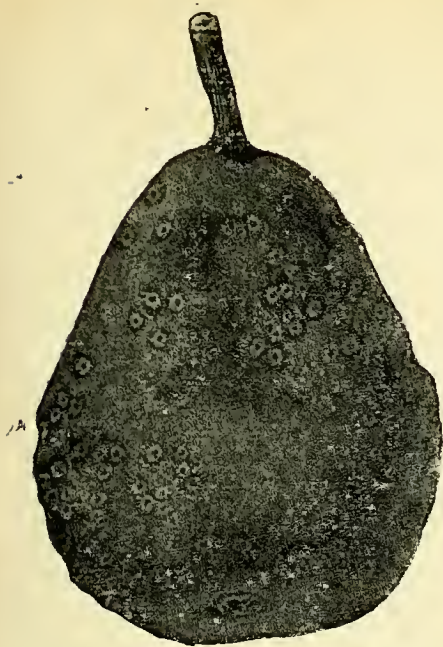


FIG. 14.—SAN JOSÉ SCALE ON CALIFORNIAN PEAR (*ASPIDIOTUS PERNICIOSUS*).
(Natural Size.)



FIG. 15.—SAN JOSÉ SCALE: FEMALE SCALE.
(Enlarged.)

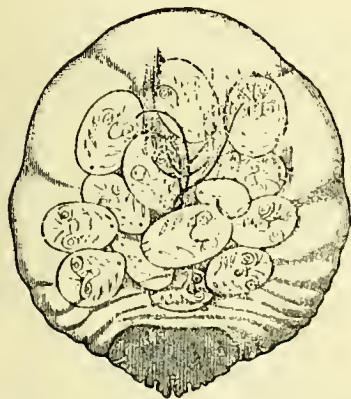


FIG. 16.—SAN JOSÉ SCALE: ADULT FEMALE, CONTAINING YOUNG.
(Greatly enlarged.)

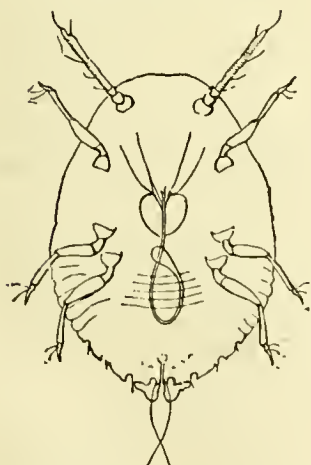


FIG. 17.—SAN JOSÉ SCALE: YOUNG LARVÆ.
(Greatly enlarged.)

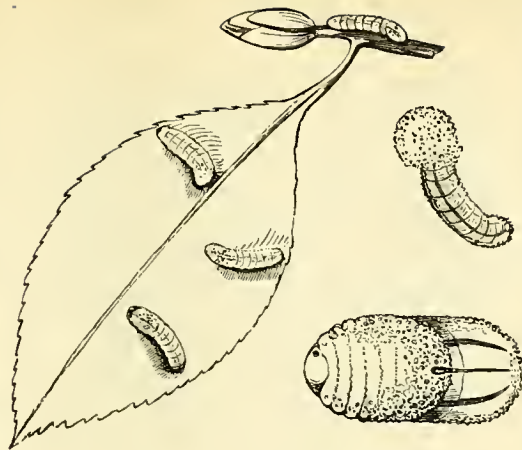


FIG. 18.—*COCCUS FLOCCIFERUS*.

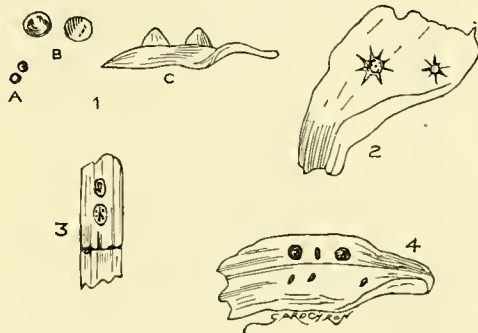


FIG. 19.—ORCHID SCALE INSECTS.

1, *Conchaspis Angræci* (Ckll.); A, natural size; B, C, enlarged; n, from above; o, from the side. 2, *Vinsonia stellifera* (Westw.). 3, *Prosopophora Dendrobi* (Doug!). 4, *Aspidiotus bififormis* (Ckll.).

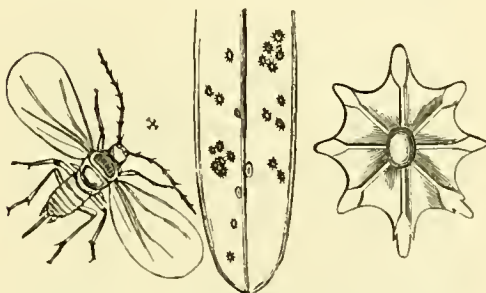


FIG. 20.—*CYPRIPEDIUM NIVEUM*, WITH *COCCUS STELLIFER*.

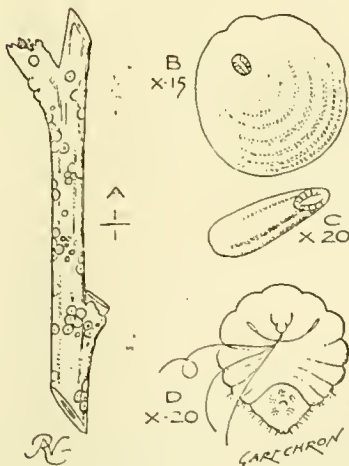


FIG. 21.—*DIASPIS AMYGDALI* (TRYON).

A, insects of real size on branch of food plant. B, scale of the female, magn. 15 diam. C, scale of the male, magn. 20 diam. D, female removed from the scale, magn. 20 diam.

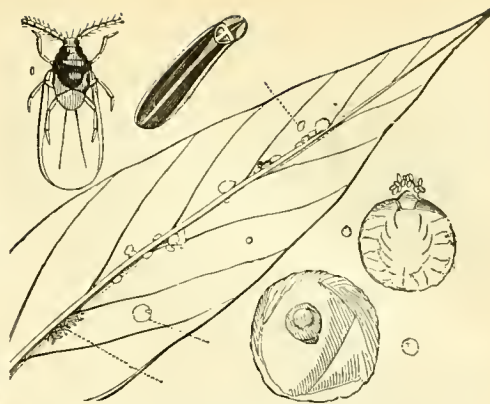


FIG. 22.—SMALL WHITE SCALE ON OLEANDER (*ASPIDIOTUS NERII*).

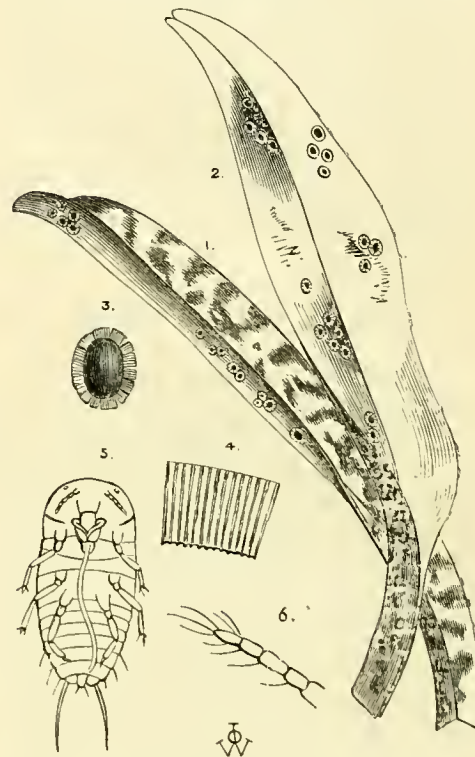


FIG. 23.—*ASTERO-LECANIUM ORCHIDEARUM*.

The "fringed" scale insect on *Cypripedium*-leaves, from Trinity College Gardens, Dublin. 1, 2, natural size; 3, scale, magn.; 4, portion of marginal waxy scales; 5, under-side of scale, magn.; 6, portion of antennæ, magn.

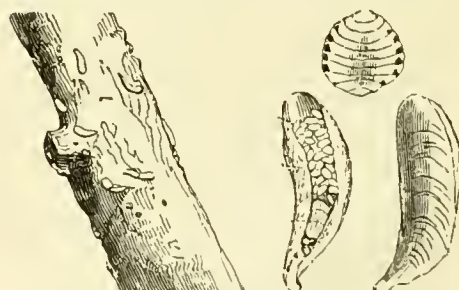


FIG. 24.—APPLE-TREE MUSSEL SCALE (*MYTILASPIS POMORUM*).

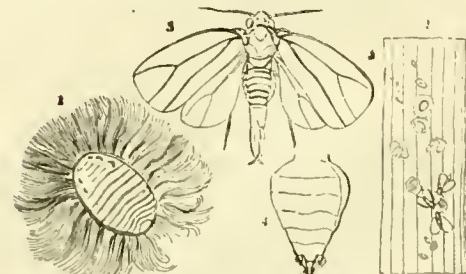


FIG. 25.—*ALEYRODES COCCIS*.

1, with insects nat. size; 2, under-side of larvæ; 3, male insect; 4, female insect.

year. Growth is extraordinarily rapid, and the handsome, firm heads remain good for a great length of time. For winter use, seed should be sown from August 14 to 30, and the plants form firm heads of about equal size till the beginning of winter, which, on plants in frames which are kept cool and dry, remain in capital condition for more than two months. *Deutsche Gärtner Zeitung*, January 18, 1902.

TRADE NOTICE.

Mr. A. APPLEBY, who has been in the employment of Messrs. Hogg & Robertson for the past twenty-two years, has been engaged by the Irish Agricultural Wholesale Society, Ltd., 151, Thomas Street, Dublin, as principal assistant under Mr. A. O. Watkins, for the new retail department which the Society have found necessary to establish in connection with their largely increasing business. Mr. Appleby, who is well and favourably known throughout Ireland, carries with him to his new sphere of duties the good wishes of a large circle of the gardeners and agriculturists of Ireland.

The Week's Work.

THE ORCHID HOUSES.

By W. P. BOUND, Gardener to J. COLMAN, Esq., Gatton Park, Reigate.

The Cattleya-house.—Afford *Cattleya Trianaei* and *C. Percivaliana*, now developing their flower-spikes, rather more water. Place the plants in a light position, and keep the atmosphere of the house buoyant. *Cattleya Mendeli* and *C. Mossiae* may still remain inactive, but do not keep them so dry as to make the pseudo-bulbs shrivel. Maintain a night temperature of 50° to 55°, rising in the day to about 60°; they will then need less water than if the temperatures were higher. If there should be any plants of *C. Mossiae*, *C. Mendeli*, or *Laelia purpurata* that have not yet finished making their growths, remove them to a warmer house, and place them close to the roof-glass. Admit bottom air freely whenever practicable.

Laelia Jongheana will now need a fair amount of water, and the full advantage of any sunshine there may be. We find that this lovely species grows much better suspended than it does on the stages. The intermediate-house or the cooler end of the *Cattleya-house* is the best position for them.

Dendrobiums.—Most of the deciduous and semi-deciduous varieties will be pushing out their flower-buds, and if not already removed from their resting quarters, this should be done at once. If the plants are left too long in the cool-house after the buds have begun to burst their sheath, they never attain their proper size and colour. The following species are now developing their flowers with us:—*D. Wardianum*, *D. crassinode*, *D. Findlayianum*, *D. aureum*, *D. nobile* and its many varieties, and *D. Linawianum*; and of hybrids *D. × Ainsworthii* and its many varieties, *D. × Cheltenhamense*, *D. × Clio*, *D. × Cybele*, *D. × Sybil*, *D. × melanodiscus*, *D. × chrysodiscus*, *D. × Silvia*, *D. × Wiganiae*, *D. × Curtisii*, and *D. × Owenianum*. Although the plants are throwing up their young growths, water must be afforded with great care, especially if the temperature of the house ever falls below 65°, or their roots will decay. It is better to afford water only when the plants are well dry, until the days are longer and there is more sunshine. "Back" pseudo-bulbs should be taken away, leaving not more than three behind the lead. The present time is a good one to cut off pseudo-bulbs of varieties it is wished to increase. When cut off, carefully label, and lay them on a dry stage till the end of February.

Miltonia vexillarium.—Plants that were potted back in small pots in the July potting, and have made vigorous growth and have well filled the pots with roots, may now be removed to larger pots, taking the greatest care the roots do not get injured in the operation. A suitable compost for them consists of two-fifths chopped fibrous peat, two-fifths clean chopped sphagnum-moss, and one-fifth half decomposed leaves (Oak, if possible). Mix these ingredients thoroughly together. Fill the pots about one-third full with the rhizomes from the peat, for we find this variety succeeds uncommonly well in this form of drainage. Do not disturb the balls of the plant, but simply liberate a few of the outside roots. If the compost is in a moist state, the plants potted will require very little water for a week or two; damp well between them, and syringe lightly overhead on bright days. As soon as the roots get hold of the new compost, they will need water freely until the flowering season is past. The spot so frequently found in this variety arises more from insufficient ventilation and injudicious watering during the short days than from the overhead syringings, which do no harm if the sanitary condition of the house is good and judgment is used. Our plants are in the *Cattleya-house* throughout the year.

FRUITS UNDER GLASS.

By JAMES WHYTECK, Gardener to the DUKE OF BUCCLEUCH, Dalkeith.

The Early Vinery.—Hamburgh Vines in flower should be afforded a temperature of about 65° at night, unless the outside air be very cold, when a few degrees less warmth will be better than employing excessive fire-heat. Start the fires as early in the morning as possible, but do not make a great fire if there are indications of sunshine. Zealously guard against having strong fire-heat when there is sunshine in the early hours of the day; the resulting heat would be most injurious, and the early opening of ventilators at this season is attended with the worst results. If the temperature does rise 15° above the mean, keep the air of the house saturated with moisture, but admit very little cold air. Thin the berries freely when well set. Sprinkle some Vine-manure over the border, water it in with chilled water, or very weak tepid manure-water from the cow-shed. If the Vines are in pots, they may be cropped heavily, being good only for one year; but permanent plants should be relieved of unnecessary bunches as soon as the fruits are set, taking care not to crop these heavily. Tie down the shoots, and leave all the growth beyond the bunch space will allow. The more leaf development there is, the more roots and vigour the Vines will acquire.

The Muscat-house.—Vines started in early January, and afforded a night temperature of 55°, may now be given 60°, and when the buds have burst, 65° to 70°, according to the weather. At all times try to get 10° to 15° more heat in the daytime. When they approach the flowering stage, a mean of 73° is required to induce them to set well; 90° in the daytime, with plenty of moisture, and a little circulation of fresh air evenly over the house.

Mid-season Grapes.—Complete the cleansing of wood-work in succession-houses with soap-and-water; paint or whitewash the walls, and remove the loose bark from the Vine-rods, which may be scrubbed with soap-and-water. A good remedy against bug is syringings with hot-water mixed with paraffin, or mix gas-tar and clay together, and paint the rods with it. Pure paraffin applied to dormant Vines will kill them; but it may be painted on bare rods when in active growth. Afford a good watering to the inside border, then remove the surface to the roots; then afford a good sprinkling of bone-meal, and Thomson's Vine Manure, covering this with 2 inches of finely-chopped turfy-loam, and finishing with a thin mulching of fresh horse-droppings. Before starting the Vines at the beginning of February, apply warm water to the border again, lightly, and through a rose-can.

Tomatos.—Plants raised last July, and grown in 10-inch pots in a Cucumber or similar house during winter months will continue to afford supplies for some time longer. Apply weak doses of "Veltha" or "Veltha emulsion," which will keep the foliage healthy, and the plants vigorous in the close air; high temperature otherwise is prejudicial to the plants. Sow a little seed this month.

Cucumbers.—Sow seeds in a small pot plunged in moist bottom-heat. When they have germinated, place them near to the glass in a temperature of 65° to 70°. Continue to crop old plants very lightly; fumigate the house, and afford moderate dressings of artificial manure to the border. Damp the paths to counteract the effects of much fire-heat. The temperature may rise with sunlight to 90°.

Peaches and Nectarines.—Upon the earliest trees the flowers will either be set, or the pollen of the blossoms will be ripe. Touch them very lightly with a camel's-hair brush or rabbit-foot on end of stick. When all are well set, afford the trees a good syringing with chilled water; and raise the night temperature to 60°. Upon very cold nights, rather than fire hard, let the heat go down to 55°. On bright days the trees may be syringed morning and afternoon; on dull days in the morning only at present. Damp the surfaces of the house frequently, but avoid a stuffy atmosphere. Afford the inside border a watering with warm water as soon as the fruit is set.

THE KITCHEN GARDEN.

By T. TURTON, Gr. to J. K. D. WINGFIELD DIGBY, Esq., Sherborne Castle, Dorset.

The Planting of Horse-radish.—Excellent roots may be obtained from land deeply trenched in the ordinary manner; but better ones are grown in beds in open situations raised somewhat above the surrounding level. Let a bed 6 feet wide be marked out, and the soil within the boundary be thrown out to the depth of 2 feet, then place some fairly well decayed manure to the depth of 1 foot over the bottom, returning the excavated soil. The bed will then stand considerably above the surrounding level. Such a plot will hold four rows of sets at 18 inches apart, the sets being planted at 1 foot apart in the rows. The best kind of Horse-radish sets are straight pieces of the roots about 1 foot in length, with the rootlets rubbed off down to the bottom. When planted, the top of a set should be about 1 inch below the surface of the soil. Sets of a length of 3 or 4 inches may also be planted at the same depth as the longer sets, also crowns, that is bits of root 1 or 2 inches in length furnished with a bud of leaves, but neither makes such serviceable roots the first season as does the longer set. Let the holes made with the dibber in planting be closed with coarse road-grit or charred garden refuse. A much larger quantity of fine roots when cultivated in this manner can be obtained from a small piece of land, than is possible under the more common practice followed in gardens of planting Horse-radish in an out-of-the-way piece of ground, and leaving it to itself.

Spearmint, Tarragon, and Chervil.—In most establishments, a plentiful and constant supply of these herbs has to be furnished by the gardener. The roots of Spear-mint should be dug up and placed in boxes with fine soil sprinkled over them; and the Tarragon in flower-pots, and forced into growth in an early Peach-house or vinery. Should the supply of Chervil from plants growing in boxes be running short, and plants exist in the open ground, hand-lights should be placed over the latter as a protection against frost that may now occur; otherwise let a sowing be made forthwith in shallow boxes.

Mustard and Cress.—Make sowings every three or four days, or according to the demand; boxes measuring 18 inches in length, 12 inches in width, and 3 inches in depth, are convenient for handling when filled with soil. An almost pure vegetable soil is most suitable, favouring

quick growth, and leaving no grittiness on the produce. Apply water to the soil with a fine rose-can. Sow moderately thick, press level with a bit of board, do not cover with soil, and cover with slates laid on the sides of the boxes till germination has taken place.

Seed Potatoes.—All seed Potatoes should by this date be put in order for sprouting, but especially so for early planting, where such has not been carried out. Ascertain the number of sets that will be required for planting in hot-bed frames, lay single layers of these in shallow boxes on sifted leaf-mould, and place in a succession Peach-house or warm greenhouse to sprout. Fill also a few boxes with the tubers set up on end for planting sheltered borders, or at the foot of south walls. Rub off all shoots of those not required for early planting, and, where there is convenience for doing so, lay them in single layers on shelves, or on the floors of any out-house where they can be kept cool, yet safe from frost.

Broad Beans.—A sowing of the Early Longpod Bean should be made forthwith on sheltered borders, and by preference on retentive soil which has been newly trenched or deeply dug. Sow the seed in double lines drawn at 4 feet apart, the seed being dropped at 1 foot apart. This is best done by throwing out shallow trenches with a spade, and dibbling in the seed with a blunt-ended tool about 1 inch deep. As the plants push up through the soil, gradually fill the trench with the earth thrown out, which will serve to protect the plants against frost; and even should the tops get cut by frost, strong shoots will be thrown up from the base. Sow also Longpod Beans at 3 inches apart in boxes filled with soil, and place in a temperature of about 50°, and as soon as the plants are well above the soil, remove the boxes to a cold pit, and plant in trenches when the weather permits in early March.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bilton, East Budleigh, Devonshire.

Filbert Trees are improved by annually thinning the branches where they are placed too thickly, keeping the centre of the bushes fairly open. Care must be taken that enough wood carrying male catkins be left for the fertilisation of the female blossoms when in flower. Should the former be scarce, some branches of the common hedge Nut with catkins upon them should be tied on the bushes as soon as the little red point can be seen on the female flowers. Shorten the strong growths made last season 12 or 15 inches, cutting to an eye facing outwards. Afford old bushes a dressing of short manure, forking this lightly in. Planting may still be done, though it ought to have been carried out before the shortest day. It is well to grow Filberts on single stems, as is done with Gooseberries and Red Currants, or the old stools throw up such a quantity of suckers each year, which if left become a mass of unfruitful wood. The Cosford variety should be planted with other sorts, as I find it always has plenty of catkins.

Raspberries.—Any replanting should be carried out forthwith. In cases of new stations the ground should be deeply dug, and plenty of decayed farmyard manure worked in if the soil be light, while that of a heavy nature may be afforded soot and wood-ashes only. The canes are trained in many ways, but I prefer to plant them in rows 6 feet apart and tie the canes to wires tightly secured to posts 5 feet in height, three tiers of wire running the entire length of the row, placed 18 inches apart from the top downwards. The canes must be at least 4 inches apart from each other when tied to the wires. Mulch the ground with straw litter.

Miscellaneous.—The pruning of all fruit-trees, except those newly planted, should be pushed forward as rapidly as possible. I find the birds are again knocking out the buds of Gooseberries, in spite of heavy syringings

with a mixture of soot, lime, and quassia extract. We are now going over the young growths again, painting them with a like mixture, but thicker in substance. The covering of bush fruits with galvanised wire netting is the only sure remedy against these winged depredators. Plum trees, especially the old Greengage, are often attacked by tom-tits. The trees should be treated the same as Gooseberries, or have $\frac{3}{4}$ -inch square-meshed netting placed over the trees. Examine each week all fruits in store, and remove those that are in the least decayed for immediate use. Bergamotte d'Esperen Pear is now in use with us, and though the fruits are rather small, and inclined to be dry, are nevertheless useful. All fruit keeps better in a darkened room, and with but little ventilation at any time.

PLANTS UNDER GLASS.

By J. C. TALLACK, Gardener to E. MILLER MUNDY, Esq., Shipley Hall, Derby.

Seed-sowing.—January is full early for sowing seeds of many species of plants that are grown under glass, excepting some which take rather a long time to develop. Most of those require a well-heated pit or house in which to raise them successfully, otherwise sowing should be deferred till a later date.

Clerodendron fallax.—It is often advised that this plant be raised from cuttings. My experience is that seedlings are better, being kinder in growth, and productive of larger flower-heads. The plant is magnificent through October, November, and even a little later when well grown; its chief fault is that a fully grown plant demands a considerable amount of space. Seeds saved from last year's plants should now be sown, several together, in a 6-inch flower-pot in very sandy soil, and the seed-pot plunged in bottom heat of 75°. The seedlings germinate more freely in pots of this size, and the difficulties of establishing them later singly in small pots are very few, provided that they are so transferred while still in the seed-leaf stage.

Tuberous Begonias, Gloxinias, and Streptocarpus have very small seeds, which should be sown on the sanded surface of well-filled and previously well-watered pans or pots of soil. For the present, the treatment will be identical, but it may be advisable to point out that the sun should never be allowed to shine directly on to the Streptocarpus seed-pan, for this would be fatal while germination is taking place and while the plants are very small. With the foregoing should be associated that pretty little plant Saintpaulia ionantha. All these may be raised in heat, the seed-pots being covered with glass, which should be frequently turned over to disperse the moisture condensed on the lower side.

Caladiums.—These should be shaken out, the tubers divided, where increase is desired and they admit of it, and started for the present in pots of sand, in which they may remain until the growth begins to grow prominently. *C. argyrites* may be divided more freely than the others, and is a most useful little plant.

Acalypha hispida.—Growing tops of this plant strike freely in a few days. The tops should be strong ones from main stems. In connection with this plant I may say, that I have found the tassels finer and better in every way when the plants have been grown in heavy loam, and rammed hard. In the ordinary mixture made up for stove plants the tassels often lengthen out into mere apologies for what they might be.

Dracaenas.—Old plants may be cut up into good tops also, and the "toes" obtained from the thickened root-stems, or suckers in embryo, all provide material from which young plants may be raised. The tops probably are the worst to manage, but should not be thrown away if well coloured.

Pandanus Veitchii.—Suckers should be stripped from the older plants whenever good coloured pieces are available. They will root readily in Cocoa-fibre or in soil if not afforded

much water; and young stock is always useful in decorative work.

Abutilons may now be struck from growing tops; they strike more readily now than later; and in any case advantage should be taken of striking young stock or anything that can be struck, so that they may be got out of the way in time to make room for general plant propagation during the next three months.

THE FLOWER GARDEN.

By R. DAVIDSON, Gardener to EARL CADOGAN, Culford Hall, Bury St. Edmunds.

Seeds.—Of the different species of sub-tropical plants, sow at this date *Melanthus major*, *Wigandias*, *Daturas*, *Eucalyptus*, *Acacia Lophantha*. The seeds should be sown in shallow pans filled with a light kind of soil, and the seedlings grown in warmth till the middle of the month of May, when having attained a good size, they may be gradually hardened off in readiness for putting into their summer quarters. Seeds of *Erythrina cristagalli* and *Francoa ramosa* may also be sown for flowering in the summer of 1903. Groups or beds of these two species in juxtaposition are very attractive. *Ricinus*, *Solanum*, *Ferdinandia* and *Nicotiana* being of freer growth than the foregoing, may be sown the second week in February, and the seedlings will make strong specimens for planting out-of-doors in the month of June. A sowing of *Celosia aurea* and *coccinea* may be made now for planting-out in the beds about the end of that month. They will flower profusely all through the summer and autumn, and are a great acquisition. It is important that all the plants named above should be pricked off into pots and pans, and when sufficiently large potted in clean pots of suitable size according to their requirements. Many a gardener will have experienced a difficulty in obtaining the required number of *Calceolaria* cuttings last autumn, many of the plants having dried off early in the season for want of sufficient moisture. This can be got over by a sowing made now of *Calceolaria* Yellow Bedder in shallow pans or boxes in an intermediate temperature, and as soon as growth commences after being pricked off 3 inches apart in boxes, remove and grow in a cool structure, where they will make satisfactory progress, and be of a useful size by the middle of May. This plant is one of the most indispensable of yellow-flowering subjects. A sowing may also be made, if stock be short, of *Centaurea candidissima*, and if the seedlings be grown in a warm-house, they will become useful by mid-June.

The Rock-garden.—In the wild rock-garden, the various patches and colonies of herbaceous perennials, Ferns, &c., may be afforded a top-dressing of fresh soil, having previously removed decayed flower-stalks, leaves, and weeds, and small shrubs that may be planted on the rockery, with a mulching of well-decayed manure where this is practicable. Remove tree-leaves, especially where there are patches of Primroses, Violets, Anemones, Crocus, and hardy dwarf bulbs. Wooden rustic-work, such as steps, bridges, seats and arbours, should be repaired. The ornamental rockery will need frequent weeding, as many of the rarest alpine do not succeed if weeds of perennial duration abound. Alterations may be carried out now, and the plants placed in position without loss of time, always making a suitable selection of soil when replanting.

DWARF BEAN CROSSED WITH THE PEA.

We learn from our old correspondent, Mr. SMYTHE, late of Basing Park Gardens, that Mr. A. GILLET, of the gardens, Sandling Park, Hythe, has raised a cross between a dwarf Bean and a Pea, the latter being the pollen parent. The seeds are said to be almost exactly like those of the Pea. We have not seen the alleged hybrid, nor are we rash enough to assert that such a cross is not possible. We await further evidence.

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 to return the unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and 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.

TUESDAY, JAN. 28. — { Royal Horticultural Society
Committees Meeting,
Annual Meeting of National
Sweet Pea Society, at Hotel
Windsor, at 3 P.M.

SALES FOR THE WEEK.

MONDAY, JAN. 27.—Plants, &c., by Protheroe & Morris, at 12.—Japanese Lily Bulbs, by Johnson, Dymond & Son, at 4.30, and Roses, &c., at 12.

TUESDAY, JAN. 28.—Botanical and General Library, at Stevens' Rooms, at 12.

WEDNESDAY, JAN. 29.—Liliums, Plants, &c., by Protheroe & Morris, at 12 and 5; at The Nurseries, Woodford, Nursery Stock, by Protheroe & Morris, at 11.—Plants, &c., at Stevens' Rooms.

FRIDAY, JAN. 31.—Perennials, &c., by Protheroe & Morris, at 12; Orchids, at 12.30.—Orchids, by Mr. John Cowan, at Liverpool, at 12.

(For further particulars see Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick —38° 8'.

ACTUAL TEMPERATURES:—

LONDON.—January 22 (6 P.M.): Max. 53°; Min. 49°.
January 23.—Dull; mild.

PROVINCES.—January 22 (6 P.M.): Max. 51°, W. Ireland; Min. 43°, N.W. Scotland.

To do justice to this volume, whose title is given in the footnote, the reviewer should be a specialist in the same department. But Mr. NEWSTEAD is the acknowledged leader in this branch of entomology, and the would-be reviewer can only bow the head in homage. There have not been many entomologists in this country who have concerned themselves with this group. It may therefore be a source of pride to gardeners that one of their fraternity should, by his own exertions, have raised himself to the foremost place in his department. Gardeners know too much about the ill-doings of mealy bug, American blight, scale, and such like creatures, some of which we figure in the present issue, but they have hitherto concerned themselves with effects, without troubling themselves to understand the causes. And yet till the cause is known, and the manners and customs—the life history—of the creatures understood, the application of remedies must be empirical.

"As a practical gardener," writes Mr. NEWSTEAD, "I had for many years been fully acquainted with the destructive habits of the mealy bugs and scale insects of our fruits and flowers, but it was not till the year 1889 that I began in earnest the study of the group on more scientific lines, when, acting under the advice of my late employer

and friend, Mr. ALFRED OSTEN WALKER, F.L.S., I began a systematic study of the group."

About ninety species and varieties are known in Britain, the majority of which occur in plants cultivated under glass, and are therefore probably of exotic origin. It has been thought advisable to make this monograph representative of all species found living in this country, so that the work may appeal not only to the naturalist, but to all those who are interested in horticultural pursuits. With this object in view, instructions are given on the methods of prevention and remedies, to which have been added from foreign sources the most approved modern systems of combating these insects on a larger scale than is usually employed in this country. Besides this, the horticulturist will also find valuable data on the natural enemies of the Coccidæ, and the extent to which certain birds feed upon the insects in question.

The opening chapters are devoted to the life-history and habitats of the insects, points which are unfamiliar to most people, but nevertheless, of great interest, and in some cases of great importance, as in the case of the introduction of destructive pests to our orchards, of which Mr. NEWSTEAD gives some illustration.

The San José scale, Mr. NEWSTEAD thinks, has never yet been met with in this country, and is not likely to establish itself on fruit-trees in the open-air. The danger to English horticulturists lies, for the most part, in the introduction of destructive coccids into our glass-houses, where, in the absence of their natural enemies, they thrive and multiply, causing us annoyance, disappointment, and loss. The mention of enemies recalls the fact that small beetles allied to our ladybird have been found in other countries very serviceable in keeping the Coccidæ in check. In the United States beetles of this kind (*Vedalia cardinalis*) have been imported from Australia to destroy the fluted scale (*Icerya purchasii*), and with excellent results. The example has been followed with equal success in Egypt and in South Africa. In this country these beetles and the ladybirds are not known to prey on the Coccidæ. Among birds, the titmouse (*Parus coerulesus*), however, renders good service, on which account, in spite of the injury he inflicts on buds, his presence may be tolerated; and the same may, in a minor degree, be said of the jackdaw and of certain other birds. "Their usefulness," says the author, "in checking such destructive species of Coccidæ as the mussel-scale (*Mytilaspis pomorum*), the Willow and the Ash-scale (*C. salicis*), which latter sometimes renders the osiers too brittle for weaving purposes, is not to be overstated. Proof such as has been given is indisputable, and I am convinced that quite 50 per cent. of these insects are devoured by the birds whose names have been appended.

In the chapter on methods of prevention and remedies, Mr. Newstead gives details of the process of fumigation with hydrocyanic acid gas—a process extensively used in the U.S.A., and which has also been tried at Wye College. It is so dangerous that it should never be entrusted to careless or unintelligent operators, but with due precautions it is no doubt likely to be a most valuable method. Less dangerous, though not entirely free from risk, in careless

hands, is the use of XL, from the employment of which for mealy bug we have secured excellent results.

Petroleum emulsion is also recommended by Mr. Newstead, and here again we can testify to the excellent results of its application in the case of mealy bug and scale. Gishurst compound is also well spoken of, but is too costly for use on a large scale. Other remedies are mentioned which are well worth the consideration of the gardener.

The chapters on classification and the full details of structure will appeal to experts, and necessitate minute microscopical comparative examination, for which few have the requisite capacity or time. All that we can say is, that Mr. Newstead's method of treating his subject is unexceptionable, and inspires the fullest confidence. The illustrations are really elucidatory, the coloured plates instructive; the index just what is required. What more remains to say but to congratulate Mr. Newstead on his unequivocal success, and to express our acknowledgements to the Ray Society, without whose aid this most valuable treatise would not have seen the light.

In order to illustrate the subject of scale insects injurious to garden-plants, we reproduce (on p. 57) numerous figures contributed to our columns by CURTIS, WESTWOOD, and other famous entomologists; and may also refer to a paper of Mr. T. D. A. COCKRELL, Curator of the Museum, Jamaica, on May 6, 1893, p. 518, wherein eighteen species of scale insect injurious to Orchids are described.

THE CONSERVATORY AT THE DELL, KING'S NORTON (*Supplementary Illustration*).—We are enabled to afford our readers a view in the conservatory belonging to G. E. BELLIS, Esq., at The Dell, King's Norton, near Birmingham, an example of a thoroughly modern method of arranging the plants. Some of the plants are permanent in the sense of being planted in the borders which flank the sides of the building, and others are portable and stand for the most part on the ground. This is a plan greatly to be preferred to that of arranging the smaller plants on stages and benches, although in the case of plants having small, particularly fragrant, or very interesting flowers, there is often an advantage in bringing them nearer to the eye of the observer. This is, however, better done by arranging such plants on small rustic stands or tables. Where the light is good, plants do not suffer when placed on the floor. The proportion of foliage to flowering plants in Mr. BELLIS' conservatory is a very fair one, and well furnishes the necessary foils to colour; and altogether the arrangements are such as may safely be followed at any season. The gardener at The Dell is Mr. G. BURROWS, to whom our thanks are due for the opportunity to insert the illustration.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees will be held on Tuesday, January 28, in the Drill Hall, Buckingham Gate, Westminster. A lecture on "The Renovation of Old Fruit Trees" will be given by Mr. GEORGE BUNYARD, V.M.H., at 3 o'clock.

CHISWICK.—Unfortunately, comparatively few of the Fellows of the Royal Horticultural Society exercise their right of visiting Chiswick, especially at this season of the year. It is a pity, for they would learn something, and they would by their pre-

* *Monograph of the Coccidæ of the British Isles*, by ROBERT NEWSTEAD, vol. i. Printed for the Ray Society.

sence encourage the officials to turn to even better account than they do the resources of the establishment. Just now the preparations are being made for the coming spring. The Vines are being pruned, the Figs have been attended to, the beds and borders have been dressed, the rockery has been overhauled, and generally neatness, cleanliness, and order prevail.

PLANTS IN FLOWER, ROYAL BOTANIC GARDENS, KEW, JANUARY 18, 1902:—

Shrubby.

| | |
|--|--------------------------------|
| <i>Arbutus Unedo</i> | <i>Hamamelis arborea</i> |
| <i>Berberis nepalensis</i> | " <i>japonica</i> |
| <i>Chi nonanthus fragrans</i> | " var. <i>Zuccariniana</i> |
| <i>Clematis calycina</i> | " <i>mollis</i> |
| <i>Cratogeomys oxyacantha</i> var. <i>præcox</i> | <i>Lonicera fragrantissima</i> |
| <i>Daphne Mezereum</i> | " <i>Standishi</i> |
| " var. <i>album</i> | <i>Jasminum nudiflorum</i> |
| <i>Erica carnea</i> | <i>Osmanthus aquifolium</i> |
| " var. <i>alba</i> (E. her- bacea) | var. <i>ilicifolius</i> |
| " <i>mediterranea</i> hybrida | <i>Pyrus japonica</i> |
| | <i>Rhododendron dauricum</i> |

Herbaceous.

| | |
|--|--|
| <i>Adonis amurensis</i> | <i>Galanthus Elwesii</i> |
| <i>Alyssum Bornmuelleri</i> | " <i>nivalis</i> var. <i>latifolius</i> |
| <i>Anemone Hepatica</i> | <i>Helleborus niger</i> |
| <i>Colechium hydrophilum</i> | " <i>orientalis</i> |
| " <i>Tonorei</i> | " <i>caucasicus</i> |
| " <i>umbrosum</i> | " <i>viridis</i> vars. |
| " <i>montanum</i> | <i>Iris unguicularis</i> vars. |
| <i>Crocus biflorus</i> <i>Pestalozzeæ</i> | " <i>reticulata</i> var. <i>sophie-</i> nensis |
| " <i>Sieberi</i> | " <i>Daufordiae</i> |
| " <i>chrysanthus</i> fusco- tinctus | " <i>Heldreichii</i> |
| " <i>Korolkowi</i> | " <i>Vartani</i> |
| " <i>Fleischeri</i> | " <i>histrioides</i> |
| " <i>vitellinus</i> | <i>Leontice Leontopetalum</i> |
| " <i>gargaricus</i> | <i>Primula denticulata</i> |
| " <i>hyemalis</i> var. <i>Foxii</i> | <i>Mereudera caucasica</i> |
| " <i>reticulatus</i> var. <i>mi-</i> cranthus | <i>Narcissus bulbocodium</i> <i>monophyllus</i> |
| <i>Cyclamen Coum</i> | <i>Saxifraga Bursaria</i> major |
| " <i>ibericum</i> | <i>Sternbergia Fischeriana</i> |
| <i>Galanthus ellicius</i> | |

"THE JOURNAL OF THE KEW GUILD."—Of the numerous periodicals which find their way to the Editor's table, there are few to rival in interest this record of the sayings and doings of old Kewites. Kew itself, it is needless to say, is of unsurpassable interest to horticulturists and botanists, and those who labour in it are necessarily more or less intimately known to those concerned in horticultural affairs. But those who labour in it come and go. It is the object of the Kew Guild to secure that those who come shall be linked with those who go, and that those who go shall be in touch with their successors. The extracts from the letters of old Kewites in all parts of the world, not excluding the fighting ones in S. Africa, show how strong is the feeling for the establishment.

RHEA FIBRE.—Mr. JEFFRIES, of the Nurseries, Oxford, sends us illustrations of the growing plant and of the fibre it produces. The value of the fibre of the *Boehmeria nivea* has long been appreciated, but some difficulties still exist in the cleaning the fibre and divesting it of resin.

CYPRIPEDIUM INSIGNE.—Mr. HAWKES, of the Gardens, Osterley Park, Isleworth, obligingly sends us an inflorescence of this species with two flowers, the upper one being the older. The bract from whose axil the flower proceeds is developed in the form of a perfect leaf. Such occurrences are not very uncommon, but are always interesting.

MONUMENT TO BARON SIR F. VON MUELLER.—We learn from *Nature* that the monument erected in the St. Kilda cemetery, Melbourne, to the memory of Baron Sir F. VON MUELLER, was unveiled on November 26 by the Governor-General, Lord HOPETOUN, in the presence of a large assemblage of personal friends and men of science.

"DAS PFLANZEN REICH."—This is a new publication directed by Prof. ENGLER, and devoted to the description and arrangement not merely of the genera, but also of the species of plants. The scope is thus enormous, and the time that must elapse before its completion cannot easily be estimated. What we have to note specially with reference to the number before us is the fact that the present "heft" is the work of our countryman, Dr. RENDLE. It was thought at first that German botanists alone would participate in this gigantic undertaking, but this appears not to be the case. Dr. RENDLE deals with the Naiadaceæ, a small but interesting group. The characters are given in Latin, the comments in English, and in some cases in German.

EARLY THRUSH.—A correspondent writes that on the Thames the thrush always sings on mild days of November in the middle of the day; and that he has heard sixteen thrushes or so on the same day in about 8 miles of distance in January.

THE SURVEYORS' INSTITUTION.—The next ordinary general meeting will be held in the Lecture Hall of the Institution on Monday, January 27, 1902, when a discussion will take place on the paper read by Mr. A. DUDLEY CLARKE (Fellow), at the meeting of Monday, November 25, 1901, and on a paper to be read by Mr. G. S. MATHEWS (Fellow), both entitled, "The Final Report of the Local Taxation Commission."

THE SHOW-HOUSE AT KEW.—Gardeners on the look-out for decorative material for the conservatories under their charge should make frequent visits at all seasons to No. 4 house at Kew. Just now the most attractive things are hanging baskets of Lorraine Begonias, full of bloom, and of a bright rosy-pink. *Primula oboconica* makes a fine show, and the Chinese forms with the "stellata" variety are very attractive. *Moschosma*, which we noted at the Drill Hall last week, is in full bloom. *Tecoma Smithii* × we noticed before, but it is still flowering, as also is *T. capensis*. That such strikingly decorative plants should flower in small pots is a circumstance that should commend them to the notice of gardeners. *Centropogon Lucyanus* × is an old friend whom we should gladly see more of. *Peristrophe speciosa* is one of the winter-flowering Acanthads which are very welcome at this season, though it does not rival the beautiful *Ruellia macrantha* lately figured. *Epæris* makes a bright display, and an effective group is made by combining Roman Hyacinths and red-berried Solanums—but this is what we might expect to find in any conservatory. At Kew we look for novelties and decorative plants not generally met with. Be this as it may, No. 4 is always attractive, and the grouping satisfactory.

GLASGOW BOTANIC GARDENS.—At a meeting of the Glasgow Corporation, on the 16th inst., it was reported that Mr. JAS. WHITTON, Superintendent of the City Parks, had been appointed Curator of the Botanic Gardens, in the room of Mr. DANIEL DEWAR, resigned. An announcement was also made to the effect that a herbarium had been presented to the People's Palace.

THE HERBARIUM AT KEW.—Preparations are now being made for the addition of a new wing to the Herbarium at Kew. The new building will be on the western side of the present edifice, and will nearly double the available space. The additions to the herbarium are so numerous and so incessant that this extra space will be none too great, and

should the proposal to remove the herbaria from the Natural History Museum to Kew ever be carried out, a large extension of the present buildings must be again made. The new wing at Kew is to be built so as to minimise the risk of fire, and when it is completed, various alterations will be made to the present building in order to render it also, as far as possible, fire-proof.

CRINUM NATANS.—In the Victoria-house at Kew this curious species is now in flower. The flowers, for a *Crinum*, are not remarkable. The floating leaves are, however, very striking; they are about 3 feet long, linear; undulate at the margins. It is a native of Western Tropical Africa.

GRAMMATOPHYLLUM SPECIOSUM.—We have already chronicled the flowering of this plant at Kew, and advert to it now to call attention to the imperfect flowers at the base of the spike. In these the perianth is four-merous, with a straight column and no lip. This reduction to whorls of two, together with a straight column, is one of the commonest malformations of Orchids, and is not devoid of significance.

BROWNEA CRAWFURDI ×.—High up amid the rich vegetation of the Palm-house at Kew, the eye is attracted by huge balls of glowing red, the more effective from the setting of the rich green foliage of the Palms. These Leguminous trees are very splendid, but they are not for those who do not possess big houses.

STANGERIA SCHIZODON is sending up its Cycad-looking spikes in the Victoria-house at Kew. This plant is not only very interesting to the botanist, but it is a handsome plant for the stove-house.

MISLETO.—In the Cape House at Kew may be seen some small plants of Olive in a 32-pot (or thereabouts), bearing a species of Mistleto, like our own, but with red berries (*Viscum cruciatum*). The same species may be seen on *Pyrus terminalis* in the Temperate-house.

THE TEMPERATE-HOUSE AT KEW.—*Rhododendron præcox* makes a great show in this house, and so do several of Messrs. VEITCH'S hybrids, some of which may be had in bloom all the year round. The Acacias are coming; *Camellia Sasanqua* has come, but the most noteworthy plant at present in this house is an unnamed species of *Agave* in full flower. It is a noble plant, with the leaves in dense tufts, each leaf very thick, lanceolate from a broad base, recurved, spineless at the margins. From the centre of the tuft uprises a shaft, perhaps 8 or 9 feet high, the upper portion densely covered with greenish-white flowers.

GRAFTING EXPERIMENTS.—According to a recent number of *Le Jardin*, M. LINDEMUTH lately showed before the Prussian Horticultural Society some interesting specimens of grafting, in which the graft had exercised a more or less marked influence on the stock. The plants were:—1st, Yellow Wallflower on Red Cabbage, in which the plant had developed below lateral branches of Wallflower, with a shoot of Cabbage and a head of Red Cabbage. 2ndly, Brussels Sprout on Yellow Wallflower. 3rd, *Abutilon Thompsoni* on *Althæa narbonensis*. The former is a shrub, the second is a herbaceous plant. Owing to the influence of the *Abutilon* the branches of the *Althæa* became persistent, and indeed, are two years old. 4th, *Solanum erythrocarpum* on Tomato (*S. lycopersicum*). The Tomato being the more rapid grower, communicated this property to *S. erythrocarpum*. 5th, *Malvastrum capense* became variegated by grafting

with *Abutilon Thompsoni*. 6th, Hybrid *Petunia* on *Nicotiana glauca*. If *Petunias* are grafted on the stems of *Nicotiana* of rapid growth, fine shoots of *Petunias* on the stems can certainly be obtained. Mr. WINTER, of Bordighera, has already made this experiment, and has grafted *Petunias* on many branches of *Nicotiana glauca*, which in that district grows as a shrub. The effect should have been very fine, but a storm bruised the heavy branches of the *Petunias*. 7th, A new plant, with variegated foliage, *Sida Napæa*, obtained by grafting with *Abutilon Thompsoni*, was a success in one instance, while another specimen remained green. 8th, *Althæa rosea* (Hollyhock) became variegated by the influence of the graft of *Abutilon Thompsoni*. Young seedlings of *Althæa rosea*, of *Malvastrum capense*, and variegated *Anoda hastifolia* have, so far, remained green.

FRUIT FROM THE CAPE.—Doubtless our readers will be pleased to have the figures relating to the imports of fruit from the Cape into this country during 1901, per the Union Castle Company's ships. They are as follows: Grapes, 6,130 packages; Plums, 2,379; Apricots, 434; Peaches, 5,703; Nectarines, 296; Pears, 1,126; Apples, 113; Pines, 37; Quinces, 8; and Tomatos, 2. The first consignment for the present year has arrived, we believe in advance of the listed time, though a week later than the first in 1901, and was made up of 234 packages of Plums; Apricots, 48; Peaches, 75 packages.

IMPROVEMENTS IN HARDY PLANTS.

The following important paper was read at a meeting of the Horticultural Club on Tuesday last by Mr. Amos Perry:—

It is now nearly forty years since I first interested myself in hardy plants. It was at the period of the "flare-up style of gardening," masses of brilliant colour for about three months, and the remaining nine almost bare. Many collections in nurseries were destroyed, and I have had to run through these doomed plants, buy up what I wanted at a nominal price, and to see these same collections reinstated within ten years from the time they were destroyed.

The only collections of repute in those days were those of Rollison of Tooting, the St. John's Wood Nursery, Youell of Yarmouth, and May of Bedale. These collections were limited in extent, but unlimited in price. *Digitalis purpurea* was priced at a shilling a plant; *Gentiana affinis* at the same figure. One had taken five minutes and the other five years to make. These were the sort of inducements offered to the public for buying hardy plants. They were practically ignored by everyone, and the trade always looked upon them as a great nuisance, costing far more than they were worth. To show how much they were appreciated, I will just give you my first experience at the old horticultural gardens at South Kensington. It was suggested that a group of some of the wonderful plants that were being collected together at Tottenham should be exhibited at one of the big summer shows. I believe this was the first time that anything like a representative collection of hardy stuff had been shown. A lot of preparation had been made, space had been written for, and on the appointed day a van with plenty of assistance appeared at the great horticultural exhibition. I saw the superintendent, Mr. Eyles, shortly after my arrival, and asked him for a space. He told me I should have to wait, and see if any were left.

I did not like my reception a bit. After waiting and worrying till about eight or nine o'clock, he told me he would come and see what I had got. "Go and wait in the yard till I come," and I was foolish enough to go. After again waiting some considerable time I went and found him, and got him to go and have a look at the class of plants I proposed to exhibit. He looked at them in the van, laughed, and said, "I cannot have such rubbish here." However, after waiting another hour or so, a man was sent to me stating they had got a place for me in the western arcade among the exhibits of wire-stands, pottery, and other accessories to the garden. I was given two large wire-stands to set up pots, pans, and boxes, and did the best under the circumstances. Now, every show in the country largely depends upon hardy plants to fill the tents.

It is impossible in a short time to go fully into such an important subject as the improvement of hardy plants, the capabilities of which are immense, but it is of vital importance that this matter should be taken up to assist in maintaining an interest in hardy plants. It is becoming more difficult every year to find novelties, and it is new or rare plants that the public want. It is surprising how little has been done in this direction. Some families, it is true, have been thoroughly dealt with, and these now form some of the chief attractions to the gardens of the present day, but how few have received the attention they deserve!

It is unfortunate that nurserymen as a rule have so little time to devote to this important matter. The older they get the more they have to do, and before they have accomplished one tithe the part of their early intentions they find their energies directed to other phases of horticulture. What a vast field there is still for enterprising men to take up hardy plants and improve them by hybridising and selection! What an opportunity many of our gardeners have for this kind of interesting work! They have the materials and opportunities, and in hundreds of cases nothing would please their employers more than to know their gardens were the birthplace of numbers of plants which sooner or later would find their way into every garden in the land.

There is also a vast field open for men fond of mountaineering, but this class of enthusiast is difficult to find, because a young man has not the knowledge to detect a new plant the moment he sees it, while the middle-aged man having the knowledge has not always the energy necessary to take a trip of two or three days' duration in the mountains, carrying all the paraphernalia required for climbing, and knowing there is no luxurious hotel in which he can recuperate for the return journey.

In one of my trips to the Pyrenees, in 1870, I was successful in finding many interesting plants, some of which are now common, while others have, unfortunately, been lost—*Ramondia pyrenaica alba*, *Primula integrifolia alba*, *Gentiana verna alba*, and a solitary double-flowering variety, which never survived the journey, *Anthericum Liliastrium major*—not the major now offered, but one growing 3½ feet, with very large flowers—and many others.

I am afraid we must fall back upon the amateur for the raising of seedlings, selection, hybridising, &c., and if we can only induce more enterprising amateurs to take up this matter no one knows what may be accomplished. Secretaries might greatly assist in the work by offering prizes for any improved variety of hardy perennials, and honouring them according to their merits.

We want more gentlemen like the late Mr. Nelson, Mr. Ewbank, and Mr. Harpur-Crewe, who did valuable work in their time; the Rev. Wolley Dod, Sir Michael Foster, who has done so much for the Iris; Mr. James Salter, the father of the *Pyrethrum*, and many others. Some genera have received a fair share of attention, and to the French florists we are principally indebted for the great improvement in the *Phlox*, which is still capable of further additions. Many of them are too tall, and the Americans have just started a new race only growing 1 foot in height, which for many purposes will be invaluable. The alpine *Phloxes* were taken in hand by the Rev. John Nelson, and to him we are indebted for one or two of the best at present in cultivation.

The Hollyhock is essentially an English flower, and Mr. Chater's name will always be associated with it, but I do not think there is much room for further improvement in that direction. We want a change, and I think the material is at hand in *Althæa ficifolia* for producing an entirely new race of Hollyhocks, dwarfier in growth, of pretty branching habit, and of far more value for many purposes than the present group.

Carnations and Pinks now occupy a prominent place in our gardens, but what a change from the old school of florists, of which the late Mr. Turner was chief! A Carnation with a fringed edge, in those days, was considered a monstrosity, no matter how free blooming or beautiful in colour, and now we hear of fringed Carnations realising thousands of dollars.

In connection with the Carnation we must not forget Mr. Martin Smith, who has done more for this flower than any man living. Long may he continue his work with this species, and set an example to others to try and do likewise with some other race.

Delphiniums have received a fair share of attention, both by English and French raisers, and many splendid varieties have been the result. A remarkable break has been obtained by Messrs. Kelway, but although the results cannot be considered great, yet it is possible that from these may be obtained other varieties of greater merit.

The idea seems to prevail that a Delphinium should be blue, and if you admit a white or a yellow into your collection it must be a good one. It is, however, a great achievement to get a break of this description, and now we have white I see no reason why yellows, scarlets, and every other intermediate shade cannot be produced.

The Oriental Poppies deserve mention as being one of the few recent families that has received special

attention, and among them are many of great merit, and still capable of great improvement. I see no reason why we cannot obtain as much variety, colour, and form, as in the annual varieties. In *Fringed Beauty* we have the first break in form. The flower has a deep fringed edge to the petals, while in Mrs. Marsh we have the first two-coloured varieties, and with this material to work from no one can form any conception of what may be obtained.

The *Tritoma* has received a good deal of attention, but the work is only half done. T. MacOwani should be taken seriously in hand, to endeavour to form a new race of dwarf varieties for summer flowering, and adapted for massing as well as for pots.

Lobelias, Penstemons, Dahlias, Chrysanthemums, and others, we know all about, but they hardly belong to the class of plant under consideration this evening.

(To be continued.)

BOOK NOTICE.

THE GARDEN OF A COMMUTER'S WIFE.

Recorded by the Gardener. With eight illustrations in photogravure (New York: The Macmillan Company. London: Macmillan & Co., Ltd.).

HERE is yet another book about a garden, or at least a book wherein the garden serves as a background, the most prominent features being: the author's domestic, and what should have been her private affairs. The Commuter's wife gives herself an excellent character as an affectionate daughter and wife, and is remarkably well satisfied with herself. As to the garden, that is a "bit of garden-ground framed in the hillside woods, of which it had originally been a part; it was to be itself, and not distorted into a feeble imitation of the classic gardens of other days and times. . . . I desire the most flowers at the least cost, as befits the frugal wife of a Commuter. Flowers for village brides, for the children, and for church festivals, and flowers to make the silent journeys from the hospital that some must take less dreary for those who follow them." This Garden of Dreams the gardener sets herself to manage without professional assistance, and in the scattered reports upon it we gather that, though absolute perfection was, as ever, unattainable, health and amusement and self-satisfaction rewarded her efforts. We on this side of the Atlantic would have been pleased to hear a little more of the hillside garden, and less of matters which (in spite of hinted depreciation of the book) inevitably suggest Elizabeth and her many admirers and followers.

Here is a little descriptive piece of which we could wish there were more:—"The borders, about 6 feet in width, were a hopeless jungle of hardy plants, interspersed at intervals with shrubs and tall bushes of the older Roses, such as *Magna Charta* and *Jacqueminot*. Some of these met over the path and partly barred the way. . . . There was a broad band of Hollyhocks, too well placed against the Honeysuckle bank to be disturbed; straggling helter-skelter were Foxgloves, Canterbury Bells, Larkspurs, Phloxes, Sweet William, Columbines, white *Anemone japonica*, still in bloom, in company with Monkshood, hardy *Coreopsis*, Evening Primroses, Honesty, and Sunflowers; while the autumnal growth of white, yellow, and red Day and Tiger Lilies, and scarlet Oriental Poppies was distinguishable."

Here, again, is a pretty picture of winter:—"The evergreens, so old that they had lost all Christmas-tree stiffness and taken easy attitudes, had been so planted that, as the Elms and Maples lost their leaves, they seemed to disappear into the draperies of these sturdy trees, and be replaced by them; so that on hill, grass slope, or flanking the walk, the furry green of White Pines or the fretwork of Spruce

and Hemlock barred out winter desolation, while the living green in the younger bird-sown seedlings of the old trees crosses the woody pasture until it blends with the sombre tone of the native Red Cedars that gather round the bars.

"Woman, you who have bought the bit of ground with trees on the cross-road, that your children may be born to country life, plant evergreens in the north for a windbreak, and on the south for a pleasure to the eye—not the new-fangled Blue Spruces, Golden Hemlocks, fit only to be confined to the lawn as breeze-excluding ornaments, or the stunted Firs of florists' catalogues, but the sturdy old forest trees that rear their heads laughing in the gale and grow mightily; White Pines and the Scotch Fir of ruddy bark, White and Black Spruce of long or clustering cones, graceful Hemlock Spruce, and the dwarfed Balsam Fir of fragrant breath."

those grown inland; but invariably there is another quality about them, viz., large size, which more distinctly points to the skill of his gardener, Mr. A. C. Axtell.

In the Sunny Hill gardens, the keen winds which at times sweep across the face of the slope on which they are situated had to be guarded against, and Mr. Broome, drawing on the experience gained during the many years he was the leading gardening amateur in the Manchester district, and played a most important part in the affairs of the Manchester Botanical Society, met the difficulty by laying out a number of little gardens, each screened by planting shrubs of different kinds, growing tall enough to protect the flowers in each of the garden nooks.

Our illustration (fig. 26), from a photograph taken in the month of July, represents the central part of one of these nooks, the screen at the back being of dwarf Pines, which are

of Phloxes, Spanish Irises, Roses, &c., which were flowering in great profusion; and some of the gardens were edged with Phlox subulata, Lychnis viscaria splendens fl.-pl., and Pink Mrs. Sinkins. Some good plants specially satisfactory at Sunny Hill are Iris Susiana, I. Gatesii, Cheiranthus Marshalli, Cypripedium spectabile, C. parvidorum, Gentiana verna, G. septemfida cordifolia, Dianthus alpinus, Morisia hypogaea, Lychnis Lagasce, Sedum Ewersii, Chionodoxa sardensis, C. Lucillie, and C. Alleni. Violets also thrive in this garden, and Princess of Wales, Admiral Avellan, and Marie Louise are the favourite varieties.

Among "tender" plants which are grown outside as hardy plants are Francoa appendiculata, Agathæa cœlestis, Lilium Henryi, L. nepalense, Veronica Chathamica, Mesembryanthemum formosum, Gazania splendens, Lobelia cardinalis, Chrysanthemum frutescens, and a number of other subjects.

Mr. and Mrs. Broome take great interest in everything grown in their garden, noting the differences in the times of flowering of various plants in different years. Mr. Broome writes under date January 18:—"We are much later this year. Last year at this time Snowdrops were over with us; this season they are only just showing for bloom. At Christmas we had in bloom in the open garden several varieties of Chrysanthemums, Marie Louise Violets, and the Roses Distinction, Marie Van Houtte, Bouquet d'Or, Gloire de Dijon, and a few others; Cyclamen hederæfolium, Cytisus fragrans, Carnation Germania, Mignonette, and other things. At the present time in flower we have Iris stylosa, I. s. alba, I. s. speciosa, I. reticulata, I. r. Krelagei, I. Bakeriana, and I. histrioides, some of them just commencing; Eranthis hyemalis, Helleborus niger, H. n. major and varieties, Erica carnea, Garrya elliptica, Viburnum Tinus, Veronica linifolia, V. elliptica, Galanthus robustus, Jasminum nudiflorum, J. n. aureum, East Lothian Stocks, Petasites fragrans, Primula vulgaris cœrulea, Narcissus Bouquet; and coming into flower, Saxifraga Burseriana, S. oppositifolia major, alba, and varieties; Saxifraga sardica, Spiræa Thunbergi, Primula denticulata, and a number of other things."



FIG. 26.—A NOOK IN THE GARDENS, SUNNY HILL, LLANDUDNO.

All this, though not very original, or by any means a reliable recommendation for all to follow, is at any rate an expression of individual opinion, and more appropriate in a Garden Boke (as we are supposed to call this) than accounts of how "my lady sat and sipped—she has recently lost a molar, and so used her lips like a beak." Passages like these jar sadly. The character of Martha Corkle, strange name for a still stranger portrait of an English servant, must be purely fictional, the dialect of the woman being that of no known British county. If such a being appeared in England at all, she would be instantly known as an American. However, the Gardener's Boke will no doubt find admirers among her compatriots, and the pictures at any rate are faithful representations of beautiful scenes.

SUNNY HILL, LLANDUDNO.

We have on several occasions noted the excellence of the flowers grown in the gardens of Joseph Broome, Esq., both in the open and in the plant-houses, which, as is not uncommon in plants grown at the seaside, seem to be darker in tint and brighter in colour than

excellent as a protection against the wind, and also afford useful shade in summer. At the end of the walk is a fine bush of Crimson Rambler Rose; behind it Galega officinalis alba; to the left of the Crimson Rambler, and on the left and right of the picture, are large clumps of Erigeron speciosus superbus, a plant which is very showy, and lasts a considerable time in perfection. The other prominent plants in the picture are Montbretias, Dianthus multiflorus Napoleon III., and other mule Pinks; Spiræa filipendula flore-pleno, Campanula glomerata, C. rapunculoides, Anemone japonica alba, Alstromeria aurea, Geranium pratense flore-pleno, G. Armenum and other Geraniums, &c., the whole forming a dense mass of flower arranged by the hand of Nature, for each plant has been growing where it flowered.

A number of such pretty gardens as this go to make up the Sunny Hill garden. Each is different to the other in the nature and arrangement of its plants. At the season when the photograph was taken there were in other parts of the gardens plants of Chrysanthemum frutescens, which grows into great plants, and affords masses of white flowers, Campanula persicifolia alba, some of the newer varieties

LAW NOTES.

DELAY IN SUPPLYING A HEATING APPARATUS.

MESSRS. WM. COOPER, Limited, horticultural providers, Old Kent Road, S.E., were sued at Lambeth County Court, on Thursday, by Frederick Chas. Savage, of Queen's Row, Camberwell Gate, to recover £6 10s., money paid for a heating apparatus. Damages laid at £22 10s. were also claimed in respect to plants killed by frost in consequence of the apparatus not being supplied by the date agreed upon.

Plaintiff's case was that early in October he ordered a heating apparatus for his conservatory, and defendants specifically agreed to supply same within one week. On October 16 an order form was sent him which he filled up and returned with his cheque for £6 10s. The apparatus not coming to hand, he wrote on the 28th of the same month a letter of remonstrance but received no reply. On Nov. 15 he again wrote, stating that unless what he had ordered arrived within 4 days, he would have to get the apparatus elsewhere. On Nov. 25 he received a communication from defendants stating that the apparatus had at length come to hand. They regretted the delay, which they ascribed to the foundry

having been inundated with orders, and asked plaintiff to withdraw his cancellation.

Defendants relied upon the written order which specified no time within which the contract was to be executed, and denied that there had been any verbal agreement.

In the result, upon Judge Emden's suggestion, the case was settled by plaintiff agreeing to take £7 10s., which had been paid into court by defendants.

HOME CORRESPONDENCE.

SQUIRRELS.—On the Wednesday preceding Christmas, Mr. Tom Speedy, a well-known Scots naturalist, lectured on "The Squirrel" to an appreciative audience in Edinburgh. For the pretty little creature he had nothing good to say. It is stupid, and when it buries nuts does not always remember the locality of its hoard. It is dirty in person, and provides food, with a warm lodging, for a vast parasitic population. But these are merely personal characteristics, of interest to itself alone. When it caters for its own food, the outlook includes other interests of great importance. Its food consists usually of fruit, nuts, acorns, haws, fungi, the cones of Pine, the young shoots and bark of Conifers and other trees, toadstools, and birds' eggs. The damage effected by the squirrel on Pine woods in the north of Scotland is so great that on some estates, in order to get rid of the "plague," as much as one shilling is paid for every squirrel's tail. As many as 1,000 to 1,200 are killed annually on a single estate, yet their numbers are never lessened, and damage to the plantation is unabated. Exactly the same state of matters exists on south country estates, but the woods being of less extent less trouble is required to destroy them. The writer is aware of many young plantations, not only Larch, but pure Scots Fir, which have been completely ruined by visitations which lasted only a few days. Squirrels are extremely fond of Sycamores and true Planes, and peel great strips of bark off young trees up to 20 feet in height, while the young buds in early spring provide a favourite dish. During the past year, especially in summer and autumn, squirrels have been the cause of great loss in gardens. One gardener assured me they carried off a fine crop of Apricots in the course of a few days, almost before they were noticed. These trees are protected in spring with glass copings and movable blinds, and it may be said that every effort is made to secure good crops to be eaten by—squirrels! I have heard of several instances, too, where Pears, quite hard and only half-grown, had been carried off; of Peaches on walls denuded of the fruit before it was stoned, and many other instances of crops utterly ruined. It becomes a much more serious affair when it happens that squirrels are preserved, and the gardener is advised not to interfere with them. I have heard of a canny Scot who, placed under these very aggravating conditions, possessed himself of a birch-broom, with a handle longer than usual, and with that instrument "swept" his trees at the moment one of his foes happened to be intent on getting supplies! Squirrels are easily caught by means of ordinary rat-traps, placed on the top of walls, along which they may travel to reach the tree they visit. It is seldom indeed that a squirrel fails to go straight into a trap, and if it does swerve aside, the removal of the trap to another part of the wall is sufficient to cause it to forget its caution. I have known wire-netting, fixed at an angle of 45° on the top of a wall, and stretching over the fruit-tree, to prove an effective barrier, but in a big stretch of wall it becomes rather expensive. B.

CHESTNUTS AT WALWORTH CASTLE.—Referring to a letter I wrote you some time ago respecting the two Chestnut-trees at Walworth Castle, I can now send you the exact dimensions:—Distance between the trees, 15 yards;

the longest branch 100 feet from bole to point; total spread of branches for both trees, 2,480 square yards; height of trees, 85 feet and 90 feet; the girth of one tree at 3 feet from ground, 16 feet; of the other, 17 feet 6 inches. The girth at the place where the first branches break away is about double these figures. W. R. Innes Hopkins, per J. R. I. H.

LORD DYSART'S PROPOSED "PARK."—It is rather a bold description to refer to what Lord Dysart proposes to offer as a public place beside the River Thames at Ham, Surrey, as a park. His proposal, so far as the chief extent of the riverside frontage extending from Ham House to nearly the Kingston Borough boundary, is to set apart a frontage of 150 feet in depth which may be planted with low trees, and be maintained as a promenade. This would be about two miles in length. Beyond Ham House towards Richmond there is an area known as Petersham Meadows, over which the public have at present certain rights of way, and these meadows it is proposed to hand over to the Borough of Richmond as public land for all time. That the view from Richmond Hill, of which these meadows are in the foreground, be not marred, it is not intended to materially change their present pastoral aspect. In Kingston the Bill proposes to grant the borough a new recreation ground, a few acres in extent, on the Dysart estate, and on the northern boundary of the town. This land is almost close to Mr. J. Walker's market garden. The Bill proposes to hand over all manorial rights Lord Dysart may possess over that splendid open space Ham Common, to the Ham Parish Council absolutely. There lies between the common and Ham village, and the River Thames, a very extensive area of open or unfenced land called Lammas-land, over which certain inhabitants of Ham have during the winter what are called Lammas rights. The whole of the land is cultivated as market farms by various tenants in the summer, and as there is no pasture, the Lammas rights of the parishioners are worthless. These rights it is proposed for a sum of money to be paid to the Parish Council to cancel, and thus place this extensive area of land at Lord Dysart's disposal. At present this splendid riverside area often resembles a wilderness more than an open space. One or two indifferent paths traverse it, running to Teddington Lock, but as an open space this land is at present quite worthless. Were this Bill to pass, and the promenade of 150 feet wide made as is proposed literally from Kingston to Richmond, exclusive of the existing tow-path, it would form the finest riverside promenade on the Thames, and the gain to local as well as to town people would be immense. It is unfortunate for Ham, a small parish wedged in between Kingston and Richmond boroughs, that it is not a part of either of these towns, as at present the Bill proposes to place the maintenance of the proposed promenade on to the shoulders of that small parish. Were Ham a part of Kingston, as it should be, then the two boroughs named could come to an amicable arrangement to maintain the promenade, and enable the now worthless Lammas-land to become one of the finest of suburban building sites. A. D.

POPULAR AND STERLING VARIETIES OF PEAS.—In the editorial footnote appended to my note under the above heading, p. 32, it is stated: "We have always understood that nitrogenous manure is not of any special value to Peas, if it be not actually injurious." It would be interesting to know upon what grounds this understanding has been arrived at. The idea is not only new to me, but it is also absolutely contrary to all practical experience in the cultivation of the Pea in the manner indicated in my note. I should like to know what there is in nitrogenous manure, such as I referred to in my article, i.e., well decomposed stable-manure, when well incorporated with the soil in the process of trenching or digging to prevent Peas flourishing in ground thus prepared? The actual facts are

these: The roots of the plants push down into each succeeding layer of manure and soil after food and moisture. To be correct, the roots are allured downwards by nitrogenous influence to partake of the feast of congenial and sustaining (gaseous) food and moisture provided therein for their special benefit, and the ultimate reward of the cultivator in the way of securing prodigious crops of Peas of the best possible quality in every way—results which undoubtedly and most conclusively will go to show that nitrogenous manure applied to the ground in the way described at p. 32, is of "special value" to Peas, and that it most certainly is not "actually injurious" to them. As the editorial footnote might lead readers of the *Gardeners' Chronicle* inexperienced in the cultivation of the Pea to form a wrong opinion on the value of nitrogenous manure, this note is written with a view to prevent any wrong impressions being made in this direction. H. W. Ward.

ABNORMAL ORANGES.—Oranges from Aleira, a town in the south of Spain, are abundant in the market at present, and about 10 per cent. of the fruit have a second Orange inside the skin of the usual one. This malformation is of great interest, as illustrating the origin of the fruit from a branch bearing a whorl of leaves; the axis in this instance has not been content to bear one whorl, and has attempted to continue the process—but the arrestment of the axial growth has caused the larger fruit to enclose the smaller, very much as a fungus surrounds other objects by the rapidity of its cellular growth. The trade-mark of the brand of Orange in which this has been observed is a scythe, but the box contains a mixture of varieties; about 30 per cent. are seedless. The habit of producing a small Orange inside the larger one is also characteristic of the Ladoo Orange of the Deccan. Should the matter be of sufficient interest, I will be glad to send specimens of the fruit. G. M. W.

NITROGENOUS MANURES FOR PEAS.—The Editor's footnote to Mr. Ward's article on Pea-culture, p. 33, January 11, may probably open an interesting discussion on this question. I have tried nitrates on Peas, with kainit and phosphates, but the results were not satisfactory; possibly, the nitrates may not have been applied at the proper time. For some years past I have always, excepting the latest-sown Peas, used Thompson's Le Fruiter and Willis' manure; also on two or three occasions Fertilitas and Vine-border Compound, scattered along the drills when sowing the Peas, the results being heavy crops up to the end of June; after that date, the effect of these manures has not been so noticeable. This I have attributed to lack of moisture, though the mid-season and late Peas have been mulched with ordinary stable-manure. I also applied some of these manures to dwarf Beans last season, with satisfactory results. During a very interesting lecture given by Mr. Shrivell before the members of the Devon and Exeter Gardeners' Association, on Jan. 15, the lecturer stated that in conjunction with Dr. Bernard Dyer he had carried out some interesting experiments at Golden Green with fruit and vegetables; and for Broad and dwarf Beans he recommended 2 parts nitrates, 4 phosphates, and 1 of potash. The results obtained by the use of this mixture at Golden Green showed great increase in the various crops. I hope to use these manures during the coming season on both Peas and Beans, and will give you the results later if you care to have them. T. H. Slade. [Do, please. ED.]

CLEANING THE LEAVES OF ORCHIDS.—I was astonished to read the correction appended to Mr. Bound's Orchid Calendar of last week. My experience has been that amongst Orchids, as well as other plants, a cleaning of the leaves is necessary much more often than once a year. Even if the plants are not infested with scale or other insects, dust will accumulate on the foliage, which, if left untouched for a year, would be black with dirt, and

would be injurious to any kind of plant. I am unable to conceive any gardener letting an ordinary foliage plant alone for so long a period, to say nothing about Orchids, especially Cattleyas and Cypripediums, or anything grown in a house where much moisture is required, and where the foliage cannot be regularly syringed. No doubt many gardeners will comment upon the advice given, as such, if acted upon, would be in many cases disastrous. *B. Bowyer.*

ODONTOGLOSSUM WATTIANUM HARDYANUM.

—This plant has at last bloomed in Baron Schröder's collection, not having shown a spike since it was purchased by him at the "Owen" sale in April, 1895. The grand spike of 26 blooms, having 2 branches carrying 6 and 4, was exhibited at the Royal Horticultural Society on the 14th inst. I can now advert to the article in your issue of Oct. 20, 1900, p. 286, where you figure *Od. W. Crawshayanum*, and I gave its history as relevant to this particular variety. My deduction, that this var. is the product of *Lindleyanum* and *Harryanum*, as proved by my own plant raised at Rosefield, has now been questioned by two eminent Orchidists. To these and to all interested I will now give my reply in detail. I have paintings, lithograph, and dried blooms of *Wattianum*, *W. Crawshayanum*, and live bloom of *W. Hardyman* before me, hence the material is ample whereupon to come to a definite comparison. One objection raised was that the square lip of this var. could not be produced by *Lindleyanum*, but must come from *sceptum*. I contend that this is due to *Harryanum*, as proved by my variety having it, even with *Lindleyanum* as the female parent. *Lindleyanum* was also said not to grow with *Harryanum*. Mr. Claes stated last week to me that it does, for he has seen and collected them in company. Another suggestion was that *Od. nevadense* might be a parent of the form pictured in *Garden*, May 3, 1890, and *Reichenbachia*, II., i., pl. 9. This can be negatived by the fact that it grows far away to the north-east, and there is not a trace of any sort left of the extraordinary processes on the shoulders of its lip. One further objection was, that the immense branching spike and heavy, round form, coupled with such deep colouring, could hardly be produced with *Lindleyanum*. I reply to this that *Harryanum* was the female parent. With this condition the plant can easily be seen to be the result of *Harryanum* × *Lindleyanum*. My plant will prove this, for if it is so characteristic of *Harryanum* with it as the male parent, then necessarily *Od. W. Hardyman* must be much more so with it as the female parent, for *Lindleyanum* could hardly be expected to bequeath as much as half its appearance in a hybrid when crossed upon so much stronger species as is *Harryanum*; though constitutionally in cultivation, many people do not find it so robust as *Lindleyanum*. I think I have now most conclusively proved this disputed matter, and if anyone interested cares to see the material whereon I have my deductions and actual proof, I shall be pleased to show it them if they will take the trouble to come and see it. I may add that my plant promises a larger bulb than ever, and I have no doubt will in time show a branching spike as *Od. Harryanum* often does when strong. *De B. Crawshay.*

THE WET EGG.—An egg when it is laid is a wet egg (the shell is wet), and the longer you can keep an egg wet the fresher it will remain. This is a truth, expounded, I believe, for the first time, and has never before appeared in print. Why do we hear so much, especially through the winter months, about bad and stale eggs? We know that hens, with all their faults, never lay stale eggs; we also know, to our cost, that but few hens during the winter lay any eggs at all, good or bad! Then, where do we get our stale British eggs from? We stupidly make them stale by dry storing. If all British eggs were wet-stored the day they were laid, such a thing as a bad or even an indifferent egg would become a novelty, a

curiosity, instead of being an everyday article of commerce. We all know that an egg becomes stale by keeping; but, let me add, by improper keeping. If an egg is kept a week it is far from fresh, if kept a month it becomes very stale, even objectionable; if kept three or four months it becomes what is termed "the egg," "shop egg," "the foreigner," "not warranted," or, to be more precise, the bad or rotten egg! We all know what dry storing is, when we look at a lot of eggs in a shop window, or upon a shelf in the farmer's larder. Wet storing is the placing of eggs the day they are laid in water-glass, and leaving them there until they are sold or required for immediate use. It matters not whether they have been wet stored a week, a month, or even five or six months, they continue equally fresh, and always good alike. Surely this is a matter of some importance to the British farmer, the shopkeeper, and to every housekeeper. There is one way, and only one way, of forcing our farmers and shopkeepers to practice a little care and attention on the freshness of the eggs they supply. Let all housekeepers refuse to purchase British eggs from any shop unless they see them taken wet out of the preserving-pan, and let all shopkeepers refuse to take in farmers' eggs except with a guarantee that they have all been wet-stored the day they were collected from the nests. There is no more trouble to wet store than to dry store, the only difference being, placing the eggs in a dry box or basket in the one case, and into a bucket one-third filled with water-glass in the other instance. Where, then, is the extra labour? Lime-water has, for a century or more, been used in many private families as a preservative, but water-glass is far better. The American and our own agricultural experimental farms and colleges have conclusively proved that glass-preserved eggs, even after six months' storing, were as nearly equal to a "new laid" as a preserved egg can possibly be. Eggs kept in lime-water, after several months' immersion, are apt to partake of a limey flavour, and are only useful for kitchen purposes, but not for the egg-cup. I can speak personally as to the efficacy of water-glass, for I have just finished two nine-gallon barrels of eggs, which I so preserved last spring and summer. These eggs proved as sound and good as when I stored them nearly six months back; and, indeed, many of them when the top was removed, retained within that "milky" matter so characteristic of an egg taken straight from the nest. All foreign and imported eggs are of necessity more or less stale and of uncertain age, having been laid weeks and sometimes months before they reach our markets. But the foreigner is more alive to his own interests than we are, and already they are beginning to practice the wet storing in water-glass, and unless we mend our ways, the day is not far distant when the stale dry-stored egg will become the specialty of the British farmer and shopkeeper. It took twenty years before our farmers could be induced to adopt, even here and there, the Dutch factory system to secure a good butter of uniform quality; how many years will it take us before we shall trouble ourselves to preserve the freshness of our eggs? As water-glass is now an article of commerce, and quite cheap, let us hope that a jar of it may soon become a fixture in the larder or store-room of all householders in town and country who can appreciate a fresh egg in preference to a more or less stale or bad one. *K. B. Baghot-de-la-Bere, Burbage Hall, Leicestershire.*

THE SPREAD OF THE CODLIN-MOTH IN ENGLISH ORCHARDS.

—The very strong representations made to us by customers and others as to the enormous and annually increasing damage wrought by this insect to Apples in Britain has led us to investigate this subject, with the view of ascertaining either the cause of their rapid increase in numbers, means of stamping out the evil, or holding it in check. The life-history of the moth is now generally known, but we might repeat that, according to Miss Ormerod, it lays an egg in each fruit,

from this the caterpillar or maggot hatches, feeding on the fruit until October or November, when it emerges, and if in the orchard crawls up a tree, finds a crevice where it lodges, covers itself with a web, and in a few weeks passes into the chrysalis state, from which the moth comes in the following June. Now, as we have no method of successfully killing them while in the winged state, it follows that we must attack them while in the caterpillar or chrysalis stage. Our investigations show that while much still remains to be done by our nurserymen, gardeners, and growers, in the efficient winter washing of their fruit-trees, the tying of tarred bands round trunks, &c., the real reason of the rapid increase of this pest (which threatens the very existence of commercially successful Apple-growing in this country) is, we think, due to the wholesale importation of grub-infested Apples from the United States and Canada. Visits to our Manchester Smithfield Market during the past three months revealed a shocking state of affairs, and we are assured the same applies to all markets throughout this country, every barrel of American and Canadian Apples received during October and November swarmed with the Codlin maggot; on the casks being opened, the under side of the lid and topmost Apples were found to be covered with them. Of course, the market salesman promptly sweeps them anywhere out of his customers' sight, and they are then free to crawl into empty produce baskets, straw litter, &c., the result is that the caterpillars are thoroughly distributed all over the country through the medium of these empty baskets and market manure; but in addition, we believe that large numbers are also distributed with the Apples to the public during October and November, to ultimately find their way into every ashpit and manure-heap, where in its weakest stage it finds winter quarters, quite secure from grower's tarred bands, caustic washes, &c. We trust your readers will take up and thresh this matter out, so that this annual importation of a most injurious pest may be stopped before it is too late. We might add, that Tasmanian Apples are quite clear of the pest, and the Nova Scotian nearly so. *Exors., Robert Campbell, John D. Campbell, Manchester, January 11, 1902.*

HARDY CRINUMS.—During the past few months three articles upon Crinums have appeared in the *Gardeners' Chronicle*, the writers of which agree in considering *C. Moorei* and *C. Powellii* as the most ornamental species. *C. yemense*, appreciatively alluded to by Mr. G. B. Mallett, is however well worthy of being grown, and their varieties; since their many-flowered umbels have a very decorative effect, and they appear perfectly hardy, at the least, in the south-west. *C. Moorei*, according to Mr. Mallett, is more tender than *C. Powellii*, and "only thrives under the shelter of a heated wall." This is apparently not the opinion of Mr. J. O'Brien, as he speaks of *C. Moorei* as being "as hardy for the open garden as most of the other bulbs regarded as permanent garden-plants." Certainly in southern Devonshire a heated wall is unnecessary for its well-being, though I must say that I have never come across the 6 feet high flower-scapes spoken of by Mr. Mallett. One of the prettiest floral pictures of the late summer was provided by a large plantation of *C. Moorei* album, which is, I believe, synonymous with *C. Schmidtii* of the Continent, growing in a long bed at the foot of a lofty perpendicular cliff in the public gardens at Torquay. The site is absolutely sheltered from the north and east by the rock wall and is open to the south and west, and is thus particularly favoured climatically, a fact which is emphasised by *Plumbago capensis* passing through the winters unprotected and flowering annually, *Physianthus albens* and *Stauntonia latifolia* fruiting abundantly, and *Habrothamnus* often blooming as late as November. In this spot the great white flower-scapes showed their beauty, not by twos and threes, but by dozens, their pure colouring

being set off in the early autumn by the soft blue of a background of Plumbago. In other gardens this *Crinum* grows in the open border, and is never injured by frost. S. W. F.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

JANUARY 14.—*Present*: Dr. M. C. Cooke in the chair; Rev. W. Wilks, Messrs. Geo. Gordon, J. W. Odell, C. S. Saunders, E. M. Holmes, G. S. Boulger, C. Bowles, Rev. Canon Ellacombe, Dr. Rendle, and Dr. Masters.

Cyclamens Discased.—Mr. A. J. REID sent corms, the roots of which were clubbed, as happens in Cabbages. On examination the appearances were seen to be due to the presence of Nematode-worms (Eel-worms).

Pelargonium Leaves.—From Mr. G. W. MURTRIE came leaves of *Pelargonium* in various stages of decay. Dr. Cooke, who has since carefully examined the leaves, reports as follows:—

"The leaves of *Pelargonium* were disfigured by large brown indeterminate blotches of dead tissue, which did not reveal any fungus mycelium when submitted to the microscope, and there was nothing local to account for the spotting. The whole appearance suggested at once to members of the Committee practically acquainted with *Pelargonium*-culture that the appearances were of the same character as are known to be caused by sour soil, and that the only remedy was to transplant into fresh soil at once. After twenty-four hours, the dead parts produced a plentiful crop of the common blue mould (*Penicillium glaucum*), which is a 'saprophyte,' and only occurs on dead matter as a consequence of decay, but is never productive of disease. M. C. C."

Arum corms.—Some corms of *Richardia africana* were shown, with here and there a patch of decayed tissue like a bruise. Dr. COOKE, who has examined the specimens since the meeting, reports as follows:—

"Both corms, otherwise of a healthy appearance, exhibited on one side an orbicular, brown diseased spot, about a quarter of an inch in diameter, entering the corm to nearly the same depth, surrounded by a paler ring exhibiting the spreading of the spot. The decayed matter from the spot showed no trace of mycelium, but was almost entirely composed of elliptical colonies of nearly globose hyaline bodies, about 3 to 4 micromillimetres in diameter, reminding one of the colonies found in *Lamprocytis*. I am therefore inclined to the belief that the disease is some obscure form of bacteriosis, hitherto undescribed."

Iris unguicularis.—Mr. BOWLES showed a ripe capsule of this species, which only occasionally ripens its seed-vessels.

BRISTOL & DISTRICT GARDENERS MUTUAL IMPROVEMENT.

UNDER the auspices of this Society an instructive lecture was given in St. John's Rooms, on Thursday evening last, by Mr. F. W. E. SHRIVELL, F.L.S., F.R.H.S., of Golden Green, Tonbridge, his subject being "Chemical Manure in the Kitchen and Fruit Garden," which was based upon the results of seven years' experimental work carried out in conjunction with Dr. Bernard Dyer, E.L.C., F.L.S., F.C.S. H. Cary Batten, Esq., J.P., President of the Association, presided over a good attendance, and was accompanied by Mrs. H. Cary Batten, who also takes a deep interest in the work of the Society.

The President, in introducing the lecturer, alluded to the great importance of the subject to the district where so much attention was devoted to agriculture and horticulture.

Mr. Shrivell, who illustrated his remarks by a series of diagrams, explained that for many years dung was the chief manure both for the farm and garden, but they were now trying by means of a series of experiments at Tonbridge, to discover whether it was better to use large quantities of dung, or to use a smaller quantity with chemical manure, or to use chemicals entirely. With regard to the system upon which their experiments were conducted, the land on which each vegetable or fruit was grown was divided into sections, each being in area a fiftieth of an acre. One section was manured with heavy dressing of dung; a second with light dressings of dung; a third with chemicals only; and the other three with a light dressing of dung, an ordinary dressing of phosphatic manure (either basic slag or superphosphate of lime) and varying quantities of nitrate of soda. Diagrams were shown, proving that after seven years' experiments, the best result was obtained by employing a

small quantity of dung with the use of chemical manures, this being specially noticeable in the case of Broccoli, Potatoes, &c. Nitrogen, phosphates and potash were the elements of farmyard-manure. The value of dung was that it was such a marvellous mechanical agent. On light, sandy soil, for instance, in dry weather it tended to keep moisture in the ground, and prevented evaporation. In the clay soils, it tended to lighten it and aërate it to a very considerable extent. That was the great advantage of farmyard manure, or what was ordinarily called dung; but it had a great disadvantage, and that was its cost.

Speaking with regard to fruit, the lecturer said experiments had been made by treating its culture in the same way as the vegetables were treated—heavy dressings of dung, light dressings of dung, plus chemicals, and chemicals alone. He had experimented on Gooseberries, Black Currants, Red Currants, Raspberries, and Plums with light dressings of dung, plus chemicals, and with chemicals alone, and adduced some interesting information upon the effects on the different fruits. For the purposes of bush fruits—Currants, Raspberries, Gooseberries, &c.—the quantities for 100 square yards (broadcast) should be 10 lb. superphosphate, 10 lb. kainit, to be applied during autumn or winter, and in early spring 7 lb. to 10 lb. of nitrate of soda. With regard to Strawberries, experiments showed that they could not grow Strawberries entirely by the aid of chemicals, but that with a light dressing of dung added to chemicals, they would be much more satisfactory to the grower. Chemical manures were also useful for the purposes of growing Onions, Beet, and Celery. With regard to the latter, he knew that most gardeners were much in favour of sewage, when they could obtain it; but he strongly advised them never to use sewage, for there was a great objection to its use in growing any vegetable that was eaten raw. Sewage should never be used for anything that was not cooked. By its use in this respect, they were apt to spread such diseases as typhoid and diphtheria. In the use of chemical manure for Celery, they would have to use discretion, but they would find that a small quantity judiciously used would ensure a splendid crop. Then again, they could make a good liquid-manure for Cucumbers and Melons. One ounce of nitrate of soda in a gallon of water used once or twice a week would considerably assist them in growing these. Chrysanthemums again were the most difficult plants to deal with; a light liquid-manure of half-ounce of nitrate to one gallon of water, might be used when the buds begin to form, but they should stop to use it when the buds began to break. In the kitchen garden, chemicals for 100 square yards, with half-a-load of farmyard manure, should be used thus: superphosphate 14 lb., kainit 10 lb. This should be dug in with the manure in autumn or early spring; and later on they should sow on the surface 10 lb. of nitrate of soda in two or more dressings. After referring to the dressings for herbaceous borders (basic slag 14 lb., kainit 8 lb., pricked in during autumn, and nitrate of soda 8 lb. in March and April to the 100 square yards), Mr. Shrivell spoke on another subject which he said was important, and especially to the professional gardeners. This was the subject of lawns. He knew that many gardeners were troubled with Daisies, and different weeds on lawns. He thought that wherever they had got a ground with a tremendous quantity of weed on it, that told the tale that the ground was really very poor. If he gave them something to make their lawns grow, they should not grumble at him if they had to cut the grass more often. There was a suggested dressing for a lawn of 100 square yards—14 lb. of basic slag with 9 lb. of kainit, and a later dressing of 5 lb. nitrate of soda. This combination was a plant food to produce the finer grasses and Clover, while it would do away with the Daisies and commoner weeds in a lawn. It did not follow if they put this on one year that they need put it on the next. The basic slag and kainit had a tendency to stimulate the growth of Clovers; and if they did not want Clovers, they must keep these two away; but if they wanted a little Clover or Trefoil, put it on. That would do away with the Daisies. Whenever they saw a meadow full of Daisies and Buttercups, they knew perfectly well that, as a rule, it was a poor meadow. They must use nitrate alone if they did not wish to grow Clover. His own feeling went to the balanced manure. It was very rarely that lawns had a dressing; the only thing they ever got was a little lawn manure, which was simply sand plus nitrogenous manure. The lecturer gave many other instances of the value of chemicals, and concluded his address amid applause.

FRENCH HORTICULTURAL OF LONDON.

JANUARY 18.—The thirteenth annual dinner of the above Society, which was held at the Imperial Restaurant, Strand, was one of the brightest and most successful of the series. Mr. Arnold Moss occupied the Chair, and was supported by a numerous company of members and friends.

The Chairman was in a peculiarly humorous vein throughout the whole proceedings. In his opening

remarks, he dwelt on the usefulness of the Society, and the great necessity of the two great nations being brought closely together in friendly intercourse, and felt sure that when many of the young friends then present returned to their homes in France, they would be able to assure their fellow countrymen that we in England only desired to live in peace and harmony with France. The health of the King, the Queen, and all the Royal Family, and that of the President of the French Republic, were then toasted with enthusiasm.

Mr. Geo. Schneider, in proposing the health of the Chairman, gave some interesting statistics of the Society, and reminded the company of the support the Society had received from English nurserymen and friends in this country, one of the earliest of whom was their present Chairman.

Mr. Moss replied, and said that the French Horticultural Society of London now consisted of 600 subscribers, and the income was rapidly increasing. He congratulated them on having a balance in hand of £140. He had much pleasure in asking them to drink to the continued prosperity of the Society, which helped many of them to feel at home although away from their native land. What we wanted was that they should enjoy themselves whilst here, work hard and take back happy recollections of their stay, and make their friends understand that we English are not exactly the savages some people represent us to be. The Chairman then paid a high tribute to Mr. Schneider for having brought the Society to its present high standing.

After Mr. Schneider's reply, Mr. Navel arose, in the name of the "membres titulaires," and presented him with a gold fountain pen in a case, as a mark of their esteem and affectionate regard for "Papa Schneider's" interest in his young compatriots.

CARDIFF AND COUNTY HORTICULTURAL.

JANUARY 17.—The annual general meeting of the society was held on the above date, when between forty and fifty members were present; Mr. JOHN GRIMES in the Chair.

The balance-sheet and statement of accounts for the past year were produced, and the report showed that the society was in a favourable position. The Mayor of Cardiff was elected President, Mr. A. M. Bailey, Chairman of Committee; and Dr. De Vere Hunt as Vice-Chairman. Mr. H. Gillett was re-elected Secretary, and Messrs. Boisford and Rees Jones were appointed to vacancies on the Executive Committee. The date of the annual show was fixed for July 23 and 24.

It was decided to affiliate the small societies in the Cardiff district. A trophy having a value of 15 guineas has been kindly given by the proprietors of the *Daily News* of Cardiff. The scheme of affiliation has been well received by the whole of the societies interested, and a very interesting competition is looked for. Last year the Committee inaugurated an art section (paintings and photography), embracing horticultural subjects, and the success attending their efforts were considered so good that it will be repeated this year.

Votes of thanks to the late President, the Marquis of Bute, closed the meeting.

BECKENHAM HORTICULTURAL.

JANUARY 17.—Mr. H. O. ETHERINGTON delivered a lecture on "Some Physiological Considerations of Plant Life," Mr. John R. Box in the chair. The lecturer explained the accepted fundamental principles of plant life, beginning with the single cell, with its power of division and adaptation to environment, its gradual development into the complex structure of plants, capable of assimilating carbon dioxide from the atmosphere, and with the aid of chlorophyll elaborating starch. The construction of cells, transpiration, with the cause and effect of the circulation of the sap, was illustrated by living specimens and diagrams on the black-board in such an interesting and simple way that the youngest could follow every stage of the marvellous developments of plant life.

At the close of the lecture questions were asked on "The cause of Vines bleeding throughout a cross-sectional cut," "Variation of cellular tissue in the structure of annual rings in forest trees," "The cause why Beans and Fops twine in opposite directions," "On some illusions of spectral analysis," "The cause of fairy rings in grass," "The construction and use of pith in trees," and "What is protoplasm?" The questions were promptly answered, but the last one defied all human effort to fathom, as a single cell of protoplasm was the beginning of life.

CHESTER PAXTON.

JANUARY 18.—At a meeting of this Society, held in the Grosvenor Museum on Saturday, January 18, under the presidency of Mr. N. F. Barnes, Eaton, Mr. E. STUBBS, Gardener, Bache Hall, read an interesting paper, entitled "The Culture of Chrysanthemums for Exhibition Purposes."

An interesting discussion followed, in which the Chairman, Mr. Lament, Mr. Wakefield, Mr. Ryder, Mr. Newstead, and others took part; and Mr. Stubbs answered several questions that were put to him.

A gratifying announcement was made by Captain MacGillcuddy, who was present, and who very kindly offered to present to the Society a challenge cup and money prizes for the best collection of plants of single-flowered varieties at the next exhibition. The Captain also said he felt sure the Society could organise a successful exhibition of spring flowers; and if this were undertaken, he would be pleased to lend it his support. Needless to say, these announcements were received with hearty applause; and in thanking Captain MacGillcuddy for his handsome offers, Mr. G. P. Miln said he felt sure the Society would in due time take full advantage of both.

LIVERPOOL HORTICULTURAL.

The fifteenth annual dinner and social evening was held at the "Bear's Paw" Restaurant on Saturday evening last. Mr. HENRY MIDDLEHURST presided over an attendance of about 150 members and friends, and was supported by Mr. A. W. Ker, Mr. T. Foster, Chairman of the Association, and Mr. Harold Sadler, Secretary. Amongst others noticed were Messrs. Webster (T. Davies & Co., Wavertree), Rowland Bros., West Derby; Charles A. Young, West Derby; B. W. Ker, F. Ker, H. Ranger, King, &c. (R. P. Ker & Sons, Aigburth); J. Finnigan (H. Middlehurst's), Mr. Guttridge (Wavertree Botanical Gardens), and a large number of the trade.

The dinner was admirably served, the usual loyal toasts following. The Chairman in proposing the toast of "Horticulture," dwelt on its progress, and especially on the capital work being promoted in the Liverpool district by the Parks and Gardens Committee, and by the Liverpool Horticultural Association. In responding for the latter Society, Mr. Foster spoke in the most hopeful terms, stating that things financial were in a much better condition—a remark that met with great applause from those present, and rightly so, for the work that has been done by the Association has, and does still appeal to gardeners throughout the kingdom.

Messrs. Ker & Sons decorated the room most lavishly, and to them and to Mr. Middlehurst the thanks of all present was due for other necessities which go to make up an evening's enjoyment. *Orchid.*

DEVON AND EXETER GARDENERS'.

The subject under treatment at the opening meeting of the session was "Chemical Manures, and their action on Bush and other Fruits, including Tomatoes, Grapes, &c."

The lecturer for the evening was Mr. F. W. E. SHRIVELL, of Tenbridge. He contended that in gardens there was generally too much stable-dung used, and too little, if any chemical manures; and that very much better results were attained by using a smaller quantity of dung, and adding chemical manures at the right time. For Currants, Raspberries, Gooseberries, &c., the quantities recommended per 100 square yards, sown broadcast, were 10 lb. superphosphate of lime and 10 lb. of kainit, applied separately during the late autumn or winter, and, early in spring 7 to 10 lb. nitrate of soda. To this might be added 25 loads of dung per acre, and this would form a liberal manuring for any ordinary garden soil. He qualified this advice as regards Strawberries, for experience had taught him that they did not like potash (kainit). For Cucumbers, he recommended applying once or twice a week a solution of 1 ounce of nitrate of soda to a gallon of water. For Chrysanthemums, half an ounce of nitrate of soda to a gallon of water was strong enough.

He gave a prescription for Vines which had proved to be a good one. It was: to each Vine, $\frac{1}{2}$ oz. of sulphate of potash, 2 oz. superphosphate of lime, and $\frac{3}{4}$ oz. nitrate of soda, to be applied at intervals, and in the order given.

An interesting conversation followed on the results attained by some of the members, who had been treating crops in the way recommended by Mr. Shrivell in former lectures to this Society, showing that the advice then given, and since acted on, had yielded the most favourable results.

The prize for the best three Onions shown at the meeting was awarded to Mr. W. R. Baker, gr. to Lady Duckworth, Knightleys, the specimens staged being Cranston's Excelsior, the three bulbs weighing $5\frac{1}{2}$ lbs. A. H.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

JANUARY 9.—There was a capital display of plants at the meeting held on this date. R. ASHWORTH, Esq., Newchurch, exhibited a large number of Odontoglossums, some choice varieties of *O. crispum* and natural hybrids being noticeable. *O. crispum* var. *Petersii* is a charming flower, but as shown it lacked size, and the Committee requested that the plant be shown again. *O. x "Lady Primrose"* is what some folk would

call *O. sulphureum*, a very nice lemon-yellow coloured flower, which received an Award of Merit. A form of *O. Wilkeanum* received a similar Award, as did also *O. crispum* var. *Francisii*. *O. crispum* magnificum received a First-class Certificate. Silver Medal for group.

R. TUNSTALL, Esq., Burnley, received an Award of Merit for *Odontoglossum crispum* var. *Reedleyense*, a fine spotted variety.

Mrs. GRATRIX exhibited a natural hybrid *Cypripedium* between *C. insigne* x *C. villosum*.

S. GRATRIX, Esq., Whalley Lodge, staged a large number of choice plants, of which the following were noticed by the Committee. *Cypripedium* x *Eurades* "West Point var.," First-class Certificate; *C. x Mons. de Carte*, First-class Certificate; *C. x Lathamianum giganteum* (a very noble variety), Award of Merit; *C. x nitens superbum* Gratrix's var., Award of Merit; *Cattleya Percivaliana* West Point var., Award of Merit.

A. WARBURTON, Esq., Haslingden, exhibited a well flowered plant of *Odontoglossum elegans* "Todd's var."

O. O. WRIGLEY, Esq., Bury, as usual staged a fine lot of *Cypripedes*, a First-class Certificate going to *C. x Mons. de Carte*; while Awards of Merit were voted to *C. x Lathamianum* Bridge Hall var., *C. x aureum* var. *Rogersii*, and *Cattleya Trianae* var. "Smiling Morn," a fine bold flower. Silver Medal for group.

Mr. R. JOHNSON exhibited *Cypripedium* x *giganteum* a well-named hybrid between *C. Lawrenceanum* x *C. Sallieri* var. *Hyeanum* (Award of Merit).

W. THOMPSON, Esq., Stone, had a few good plants, a First-class Certificate going to *Cypripedium* x *Stevensii*, a lovely hybrid between *C. Calypso* x *C. x Albert Hye*; it partakes freely of the former parent, and is a well-balanced flower, of rather large size. The same exhibitor received Awards of Merit for *Odontoglossum crispum* var. *giganteum*, *Laelio-Cattleya* x *Charlesworthii* (*L. cinnabarina* x *C. aurea*), one of the best and brightest of this section yet seen in Manchester; and *Cypripedium* x "Christopher" (*C. Lecanum giganteum* x *C. x Actæus*).

W. BOLTON, Esq., Warrington, exhibited a peculiar form of *Cypripedium* x *Ceres*.

E. ROGERSON, Esq., Didsbury, received an Award of Merit for *Cypripedium* x "Rivieri."

Messrs. F. SANDER & Co. staged a number of good hybrid *Cypripedes*, none of which however came under the Committee's notice.

JOHN COWAN & Co., Gateacre, staged a few good *Odontoglossums*, and received an Award of Merit for *O. Wilkeanum* var. *albens*.

Messrs. HUGH LOW & Co., Enfield, received Awards of Merit for *Cypripedium* x *Euryades* "Gow's var.," and for a hybrid between *C. callesum* x *C. Charlesworthii*, very rich in colour (Bronze Medal for group). P. W.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

ANNUAL MEETING AND ELECTION OF PENSIONERS.

JANUARY 23.—While these pages are passing through the press, the supporters of this excellent Institution are assembled for the purpose of holding a special general meeting, followed by the sixty-third annual general meeting. The meetings took place at "Simpson's," Strand, and were well attended. Mr. Harry J. Veitch presided.

ALTERATIONS OF RULES.

At the special general meeting the chief business was the consideration of the Committee's proposals in respect to alterations and additions to the rules of the Institution. These were as follows:—

That from and after the registration of the amendments of the 5th and 10th Sub-sections of Rule III., the sub-sections as they now stand be hereby repealed, and the following rule substituted:

"All candidates eligible under Rule III., Sub-section 2, who have been annual subscribers, or the widows of such, shall be entitled to receive a certain number of votes in proportion to the number of years they have subscribed, that is to say:

"For each guinea subscribed for each year 100 votes, and in like manner the votes to be increased for each additional guinea per year subscribed.

All candidates who are or may become Life Members on payment of 10 Guineas, and who are eligible under the same Rule and Sub-section, or the widows of such, shall be entitled to receive 100 votes for each year of Life Membership, but such 100 votes per year shall not continue to be given for more than 10 years, being 1,000 votes for the 10 Guineas, and by payment of 20 Guineas be entitled to 200 votes per year not exceeding 10 years, being 2,000 votes for the 20 Guineas, and so on in proportion, but subject nevertheless to such other rules as apply to the election of pensioners.

Rule III., Sub-section 3.—After "total incapacity" in second line, insert the words "through accident or incurable disease." After "incapacity"

in fifth line, insert the words "from work at any age." After the word "certificate" in sixth line, insert the words "such certificate to be given when required by the Committee of the Institution by a Medical Officer to be appointed by them."

Rule III., Sub-section 11.—Substitute the words "List of Candidates" for "Pension List" in the sixth line.

Rule IV., Sub-section 2.—Strike out the words "one vote for each vacancy" in third, fourth, and seventh lines, and insert the words "five votes."

Rule IV., Sub-section 3.—Strike out the words "one vote for each Pensioner to be elected" in fourth and fifth lines, and insert the words "five votes at all elections of Pensioners."

Rule XIII., Sub-section 1.—Strike out the words "All Life Subscriptions received from those Members who may become eligible as Pensioners under Rule III., Sub-section 2 and."

ADD THE FOLLOWING NEW RULE:—

Rule III., Sub-section 10.—"After each election the Committee may if they think fit award Pensions to not more than two of the remaining unsuccessful candidates."

The Chairman and honorary Solicitor explained the reasons that led the Committee to recommend the alterations, which were supported by Messrs. Arthur Sutton, Geo. Monro, Owen Thomas, George Wythes, Peter Veitch, &c. The first amendment to Rule III. caused a little discussion, but was ultimately carried with but two dissentients. The other amendments were adopted unanimously.

THE ANNUAL REPORT, &c.

Mr. Harry J. Veitch opened the proceedings of the annual general meeting at 3 P.M. The report and balance-sheet of the Institution (as audited) for the year 1901, were adopted with general satisfaction. Officers were elected for the forthcoming year, and other routine business was done.

The Committee recommended that there be twenty new pensioners added to the fund, but in consequence of—

Barnard, John, Cheltenham, aged 64, life member for twenty-five years; Briggs, Alfred G., Reigate, aged 68, annual subscriber for fifteen years; Collins, John, Bristol, aged 59, annual subscriber for eighteen years, totally incapacitated through incurable disease; Dean, Emily E., Oxted, aged 61, widow, late husband annual subscriber and life member for twenty years; Derri-eutt, John, Penrith, aged 66, annual subscriber and life member for seventeen years; Gray, Mary A., Dorking, aged 65, widow, late husband life member for seventeen years; Harris, William, Bromley, aged 79, annual subscriber and life member for twenty-nine years; Long, William, Bristol, aged 67, annual subscriber for twenty years; Morris, Samuel, Burley, aged 67, annual subscriber for fourteen years and life member for twenty years; Mundell, John C., Ryde, aged 67, annual subscriber for twenty-one years; Sandford, Charles, Luton, aged 70, annual subscriber for twenty-four years; Taylor, Matilda, Worcester, aged 70, widow, late husband annual subscriber for twenty-five years; being in distressed circumstances, and having in every way complied with the regulations, the Committee, after investigation and careful consideration in each case, recommended that these twelve applicants be placed on the funds without election, in accordance with the present rules, and the recommendation was adopted.

The Committee also reported that during the year 1901, the following widows of pensioners have been placed on the funds without election, in accordance with Rule III. 13. Foulkes, Eliza, aged 27, Newcastle, Staff.; Parsons, Eliza, aged 79, Lewisham; Perkins, Mary, aged 81, Exeter.

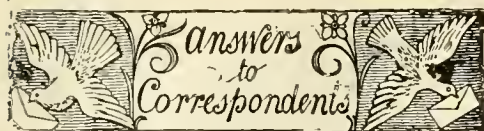
ELECTED CANDIDATES.

An election for the remaining eight vacancies was then proceeded with, and the result is as follows:—

| | | | | |
|--------------------|-----|-----|------|--------|
| EDWIN ATKINS | ... | ... | 4735 | Votes. |
| JOHN WILDER | ... | ... | 4186 | " |
| RICHARD HUNT | ... | ... | 3917 | " |
| SAMUEL HICKS | ... | ... | 3677 | " |
| WILLIAM HERRINGTON | ... | ... | 3202 | " |
| GEORGE MARLOW | ... | ... | 2922 | " |
| ELIZA WIGHTON | ... | ... | 2872 | " |
| ELIZABETH BAXTER | ... | ... | 2711 | " |

There were twenty-five unsuccessful candidates.

In the evening the Annual Friendly Supper took place also at "Simpsons."



ANTS IN HOT-HOUSES: G. E. S. These pests of the gardener can be annihilated by using the Ballikrain Ant Destroyer, sold by Alexander Cross & Sons, Ltd., 19, Hope Street, Glasgow, who can, owing to the operation of the Pharmacy Act, only sell in bulk, which may mean in the case of this article in quantities of 1 gallon.

APPLE SHOOTS: W. T. Affected by *Nectria ditissima*; cut out affected branches and burn them. Spray the young shoots with Bordeaux Mixture.

BOOKS: H. P. and W. H. *Peach Culture*. Mr. Upcott Gill, Bazaar Office, 170, Strand, W.C., published a useful little manual on this subject, from the pen of the late D. T. Fish, which may still be procurable, though it is twenty years since it saw the light.—H. C. Mr. J. Douglas, Edenside, Great Bookham, Surrey, publishes a manual on the Carnation; and another on the Chrysanthemum may be obtained from Mr. E. Molyneux, Swanmore Park, Bishops Waltham.—*Gardening in the Tropics*: R. B. A useful book for a resident in New Guinea is *Tropical Gardening in British Guiana*, by John F. Waby, published by J. Thomson, Argosy Press, Demerara. The author, a gardener, was for many years a resident in Trinidad and Guiana.

CAUSTIC SODA-WASH AND PLUM-TREES: T. S. If employed at the strength given, and in the manner advised, it is harmless to the buds so long as these are closed, but it should not be applied after there are signs of a renewal of growth. The safest period yet remaining would not extend beyond February 14 in parts of the country south of the Humber.

CORRECTION: In Mr. Worsley's article, for fulvous read pulvovous; used as a synonym for pulverulent=dusty.

DENDROBIUMS AND ODONTOGLOSSUMS DENUDED OF THEIR FLOWERS: S. W. To remove the whole of the flowers before or as soon as they open would have the effect of imparting vigour to the plants, other things being equal; and if the plants are not flourishing, the effects are sure to lead to finer flowering and stronger growth the year afterwards.

EARTHWORMS AND SUBSOILS: *Weekly Reader*. Earthworms are not found in pure sand, swampy, or bog-earth, and not in any great number in hard, dry peat, resting on sterile gravel and sand; but in almost all other kinds of soils they exist in enormous numbers.

FUSICLADIUM: H. A. Rott. We cannot tell you which particular *Fusicladium* is meant by your Australian correspondent; probably it is *F. dendriticum*, which causes black patches of rust on the leaves and fruits of the Apple, killing the rind of the latter, causing it to crack. It is very common in this country.

GARDENERS ADVERTISING IN CANADIAN AND U.S.A. GARDENING JOURNALS: C. F. You might advertise in the *Canadian Horticulturist*, published at Grimsby, Ontario; the *American Florist*, 324, Dearborn Street, Chicago; *American Gardening*, 136, Liberty Street, New York; and *Florists' Review*, 520 to 535, Caxton Buildings, Chicago.

HOW TO MIX TAR AND CLAY FOR DRESSING VINES: J. B. The clay, which should be free from stones, should be dried, and then pulverised, added as powder to the tar, and well mixed together, water being afterwards added to bring it to the desired consistency.

MEDIUM FOR ADVERTISEMENTS: B. Wulf. *Cape of Good Hope Agricultural Journal* (official), and *Cape Times*.

MELONS IN A PEACH-HOUSE: H. P. The temperatures suitable for Peach-forcing are too low, generally by 10°, for successful Melon-growing; besides, the means of affording bottom-heat are lacking, and that is the chief point.

MUSHROOMS FAILING TO GROW SATISFACTORILY: G. P. S. The cellar seems a suitable place, but we incline to the belief that the temperature is kept too high; 58° to 60° is sufficiently warm at any season. The soil with which the bed is covered is not one calculated to produce good, fleshy, solid Mushrooms, and you should substitute a heavier one, or mix strong loam with that you are accustomed to employ. The beds must be made up of sufficient thickness—say, 2 feet—so as to be capable of retaining the inner warmth for two months, hence the stable-manure must be heated in a heap, which should be opened and turned and mixed together twice before it is made up into a bed. The bed must be put together piece-meal fashion and made firm as it rises. Spawn at 98°, and soil down soon afterwards. When the heat shows no signs of rising higher, cover the bed with mats and litter to conserve its warmth. Buy *Mushrooms for the Million*, by Mr. J. Wright, at the office of the *Journal of Horticulture*, Wine Office Chambers, Mitre Court, Fleet Street.

NAMES OF FRUITS: C. H. F. Your package, apparently posted on the 15th inst., only reached us on the 22nd inst., and without the label. The fruits are over-ripe, but No. 1 is clearly Glout Moreaux, and No. 4 probably a small fruit of *Ne Plus Meuris*.

NAMES OF PLANTS: Mrs. Ross. *Cypripedium* × *Measuresianum* (venustum × villosum).—A. E. W. 1, *Adiantum capillus-veneris* *Mariesii*; 2, *Adiantum Paotii*; 3, *Adiantum cuneatum* dissectum; 4, *Adiantum excisum*; 5, *Onychium japonicum*; 6, *Adiantum concinnum* latum, or a garden form of it.—J. R. A variety of Linden's *Hemantus mirabilis*.—Gen. L. Smith. The Cowslip Creeper of India is *Pergularia odoratissima*.

ORCHID INSECTS: W. H. D. The grub in the young shoot of *Cattleya* is that of a species of beetle not much unlike the grub of the *Dendrobium-beetle* (*Xyleborus perforatus*), but it is not apparently of this species. The spider got smashed in transit, and cannot be determined; it is quite harmless, however, and has nothing whatever to do with the presence of grubs in the Orchids. Your only remedy is to remove the grubs with the diseased shoots and destroy them. If you could send us one perfect beetle, we might be able to identify it for you.

REMOVAL OF VINE BARK: A. H. So long as only the rough outside loose bark is removed no harm is done, but the living bark below must not be disturbed.

SCALE ON PALM-LEAVES: C. B. *Ischnaspis filiformis*, the "blackthread scale" of Mr. Douglas (see Mr. Newstead's volume on Coccidae, mentioned in our present issue, Pl. xxvii., figs. 1 to 9, p. 210).

SPRINGY TURF AND LEAF-MOULD: *Weekly Reader*. Leaf-mould alone, or even when present in considerable proportion in the staple, does not tend to the making of a good lawn. The "good, sound, springy turf," concerning which you ask our advice, is due, when it is not caused by the growth of much moss among the grasses, to a very long-continued course of careful cultivation; to frequent top-dressings of manure, of soil, wood-ashes, &c., which by slow degrees raise the original level of the lawn, and bring about a vertical thickening of the mass of roots of the grasses and other herbage. Doubtless, much of the grass in old parks and gardens (the individual plants) is far older than the ancient Oaks and Chestnuts standing around. The mowing-machine, by its weight, is ruining the springy turf of our old gardens, and in other ways spoiling them. The most pleasant lawns upon which to walk are not those that are much rolled or machine-cut, or on which crowds of persons assemble, though this last, being at intervals only is not so detrimental; but those which contain quantities of the finest grasses, a large proportion of *Trifolium repens* and *T. minus*, and no coarse-growing species of

grasses, Plantains, Sow Thistles, Yarrow, Daisies, &c. We would not advise the use of a layer of coal-ashes under the turf, excepting for a lawn-tennis court, where a rapidly-drying surface may be a desirable object, as the ashes would have the effect of neutralising the action of the worms in bringing the subsoil to the surface in the form of excreta, but only for a time, for they would certainly burrow through it. If the land is wet, let it be well drained with tile and rubble drains combined, always the best kind of drain where trees exist, putting them in at 3 to 4 feet deep and 25 feet asunder, following the line of the slope if there be any. If there is an average thickness of soil of an ordinary kind, say, of light or heavy loam, or of marl or chalky clay or loam, let this be trenched or deeply dug; and if poor, manured with stable or farmyard dung. The staple, if it can be retained, is to be preferred to any artificial mixture. As regards your inquiry as to the use of lime or ferruginous sand as top-dressings, the former would benefit the grasses if the land is lacking in lime. It should be slaked before using, and preferably mixed with clean loam, and not with road-scrappings and ditch cleansings, although these may do as dressings for arable land, but they contain too many undesirable weed-seeds to fit them as dressings for a lawn. The sand would do no good. Unless an excessive quantity of manure is dug in before a lawn is made, it will not cause unsteadiness. It is not a good practice to lay a race-course up for hay. Sheep penning with roots and cake afforded in the early part of the season, and simple sheep grazing at other seasons are to be preferred.

SLEEPERS OF WEST AUSTRALIAN RAILWAYS: C. These are constructed of "Karri" and of "Jarrah." Karri is yielded by *Eucalyptus diversicolor*, Jarrah by *E. marginata*. See Von Mueller's *Eucalyptographia*, M.

THE USE OF CLAY VINE DRESSINGS: A. H. It has two valuable uses: it gives an adhering and smothering character to the dressing of which it forms part, killing insects by preventing respiration; and it is a vehicle for the retention of pungent odours, as when it is used in conjunction with gas-tar. When used along with sulphur, lime, and soft-soap, as a dressing on Peach-trees infested with scale-insects, its value lies chiefly in its adhesive smothering nature; and when it at length falls off or is removed by the syringe, the scale being dead comes away with it, and the bark is left clean and bright.

XL-ALL LIQUID AS A VINE DRESSING: A. H. We have no experience of the liquid, and should be glad to have that of any gardeners who have used it against mealy-bug, scale, &c., on the Grape-vine. There is no infallible antidote for insect pests, but the gardener must be ever up and doing.

COMMUNICATIONS RECEIVED.—J. V., Oaklands, California, with photograph, many thanks.—G. M. W.—T. H. S., photograph, many thanks.—Gen. L. G.—W. B. R.—E. H. J.—J. O'B.—A. W.—W. E. G.—Dr. Franceschi, California.—M. Durand, Brussels.—de B. C.—E. C.—W. C.—A. W.—C. J. Yes, please: we will look at it.—Gen. Lucie Smith.—E. H. J.—H. S. W.—T. L., del Monte, California.—E. W. C.—G. Wassell.—F. P.—W. M.—W. R.—A. W. B.—J. D. A.—B. S. G.—E. J.—J. W.—W. H. C.—T. H. S.—E. C.—Jas. D.—Harrison Weir.—W. J. C.—J. O'B.—Dr. Bonavia.—W. H. D.—A. H.—Rev. H. F.—H. M.—J. M.—T. H.—J. I.—Mac.—E. T.—E. B.—C. G. G., Altrincham.—H. C.—P. M.—C. P.—Case Bros.

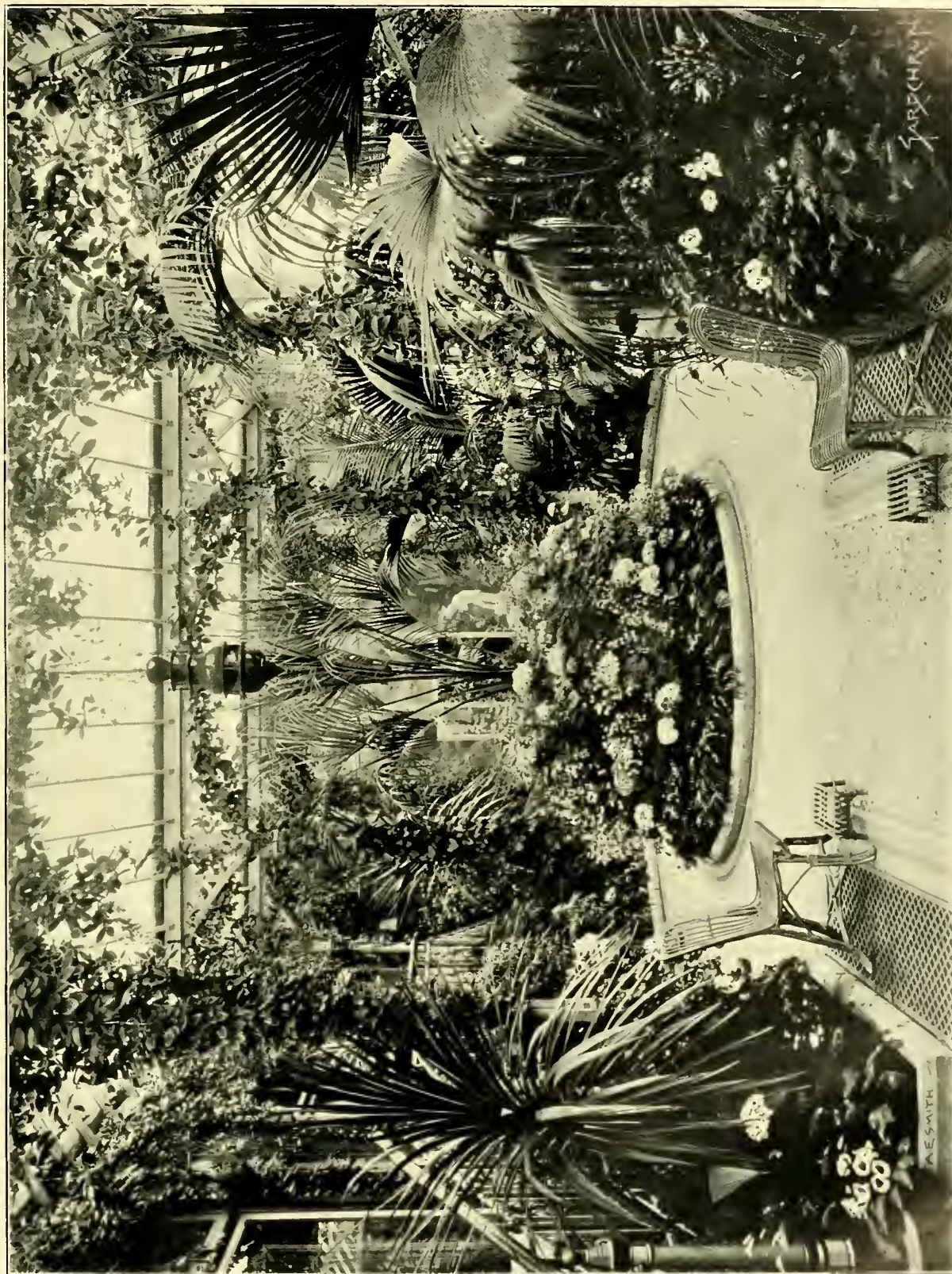
Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

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.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES OF GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN and COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

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



CONSERVATORY AT THE DELL, KING'S NORTON: PHOTOGRAPHED BY MR. COMPTON, BIRMINGHAM.

THE

Gardeners' Chronicle

No. 788.—SATURDAY, FEB. 1, 1902.

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WHAT IS THE BACHELOR'S BUTTON?

MOST people would say, and without hesitation, the double-flowering *Ranunculus acris*, and it might be a surprise to them to be assured that this plant is only one of the many that at some time or other has had that quaint designation bestowed upon it. [See Britten and Holland, *Dictionary of Plant Names*, 1886]. Still greater would be their surprise if it could be shown that this double Buttercup possesses a very slight claim to the name, a claim depending almost entirely on its being so designated by the compiler of *The New Herbal* in 1578, and after a lengthened abeyance, in having its claims revived in these latter days. The name with its meaning has become somewhat involved, so, in order to add to the lucidity of what follows, it will be necessary to pursue it down the centuries, but in the pursuit I shall endeavour to be as rapid as possible, and therefore brief; first explaining, however, that "Bachelor's Buttons" very frequently occur in Garden Literature, and most often as a name complete in itself.

Exactly twenty-one years after the date above-mentioned, Gerarde in *The Herbal*, that chattiest of books, tells us that the double form of *Ranunculus bulbosus* "is called generally about London Batchelours Buttons." This plant has become very scarce, but the single form is not uncommon as a weed. The root, from its shape, has been called St. Anthony's Turnip, and possesses a sap so acrid, that for centuries it has been chosen by able-bodied beggars as the best medium to apply to leg or arm to produce those horrible blisters that appeal so strongly to the simple-minded. Gerarde also adds *R. aconitifolius* fl.-pl., grown in gardens commonly as "Fair Maid of France," though erroneously, the single-flowered form being the "Fair Maid." It is

she who figures with "Cockle-shells and Silver Bells" in *Mistress Mary's Garden*. Johnson, in the 1633 edition of *Gerarde*, introduces the double red and the double white Campion, as well as a sort with greenish flowers, as Bachelor's Buttons, and says, no doubt in all sincerity—"The similitude that these floures have to the jagged cloath-buttons anciently worne in this kingdome gave occasion to our gentlewomen and other lovers of floures in these times to call them Batcheloure Buttons." Johnson's reason has, consciously or unconsciously, appealed to most people since as one worthy of all acceptance.

Four years previously, John Parkinson, that ever delightful writer on flowers, admits into his *Garden of Pleasant Flowers* two plants which he calls Bachelor's Buttons, the one *Ranunculus bulbosus*, and the other the double Mock Marigold; while in his *Theatrum Botanicum*, the double white Campion receives that designation. Then there elapsed the wide space of a hundred years, when *Centaurea montana* was added to the number; and during the succeeding hundred years several more plants acquired the name, e.g., the common red and white Campion, so pretty and sweet during summer in open woods; the double Ragged Robin, double Sneezewort (*Achillea ptarmica* fl.-pl.), while *Ranunculus acris* reappears after its long eclipse.

During last century nothing novel concerning the plant appeared in gardening books, but the unremitting attention bestowed on folk-lore in all its branches has brought to light several plants not hitherto known to have been called Bachelor's Buttons. Thus in Devonshire and in South-west Scotland there is the Burdock; in Wilts and Somerset, *Scabiosa succisa*; in various districts in the South-west of England, Feverfew; the leaves of Navelwort; Herb Robert, which is called "little Bachelor's Buttons"; and Knapweed, or *Centaurea Jacea*. Daisies and Pompon Chrysanthemums have also been thus named, so that no fewer than twenty plants aspire to a designation at first sight so meaningless. I have already quoted a reason for the name, and it is only fair to say there are other Buttons with distinctive appellations, instances of which are Barbary Buttons, Cockle Buttons, and Soldiers' Buttons. It is therefore no ways singular that there should be a Bachelor's Button, though strange that so many plants should bear the name. Johnson has supplied a reason, but an incomplete one. Numerous instances occur of writers of the Shakesperian era using the word, with which it may be assumed Johnson was acquainted. A few are as follows: "I'll weare my bachelor's buttons still," says one. "He weares bachelor's buttons does he not?" queries another. "I am a bachelor," asserts one swain, "I pray you let me be one of your buttons still then;" and, "Here's my husband and no bachelor's buttons are at his doublet," exclaims a wife. Unfortunately in most cases the Bachelor's Buttons are mentioned along with that redundancy of indelicate allusion which is so marked a feature of the period. Shakespeare himself alludes to the same custom in *Merry Wives*, where Mine Host of The Garter declares his belief in the ultimate success of Fenton in his pursuit of Anne Page, because, with other pregnant signs, "'tis in his buttons." It is clear

that, whatever the flower, it must have been carried openly, because in one instance they are mentioned as having been carried in the doublet. Girls also are said to have carried them under their aprons. One of the numerous commentators of Shakespeare in the eighteenth century, when his every word was analysed and criticised, put the question in a new light. Alluding to the remark, "'tis in his buttons," he observes, "It was an old custom among the country fellows of trying whether they should succeed with their mistresses, by carrying the Bachelor's Buttons (a plant of the *Lychnis* kind, whose flower resembles a coat-button) in their pockets, and they judged of their good or bad success by their growing or their not growing there." From what we know of the flowers of any *Lychnis*, we should expect nothing but "bad success" to follow a trial of this kind. But the quotation is interesting as showing that bachelor's desirous of assuming the role of Benedict, the married man, did resort to a mild sort of necromancy, in which the Bachelor's Button played an important part. The custom hinted at above existed till quite a late period in some parts of the West of England, and earlier it would almost certainly extend to many parts of Great Britain. Flowers were without a doubt cut off the living plant, and placed in the pocket with an expectation that growth would follow; but it requires but a slight knowledge of our native flora to be aware that only plants like the Burdock and Knapweed are capable of producing florets after the flowers have been decapitated. The method used in the South-west of England consisted in selecting three forward buds of Knapweed, out of which the florets were extracted. The empty "buttons" were then placed in the pocket of the person interested, and removed at a set time, the growth of florets meanwhile indicating a result favourable to his desires, non-growth the opposite.

It is an interesting fact that a somewhat similar custom existed in Scotland, but the plant in this case was called a carl-doddie, the florets being stripped off, and as girls only used this charm, they named each of the three flower-heads after one of their male friends. Placing the carl-doddies together in her left shoe, the experimenter then placed the latter under her pillow and slept on it for a night: the flower-head that made growth showing the man who should marry her. The word, it may be briefly explained, is "carl," a man, and "doddie," any living thing with a smooth head—as, for instance, a cow without horns is a "doddie." Perhaps a "cropt man" may be a good English equivalent. By all good writers who know Scots' "*Plantago lanceolata*" it is thought to be the "carl-doddie," but *Lilium pomponium*, curled Kale, White and Red Clover, and by Scott in *Border Minstrelsy* a "marsh" plant, have been named. The word is a very old one. I have seen it in a manuscript note of a contemporary date in Lyte's *Herbal*, where *Scabiosa*, in which *Centaurea Jacea* is included, are indicated as carl-doddies. It is not without interest that the same plant used by a male to afford him knowledge in his wooing, and called Bachelor's Buttons, should also be called carl-doddie, a plant which was used for exactly the same purpose, and in nearly the same manner, by the opposite sex. B.

ORCHID NOTES AND GLEANINGS.

LÆLIO-CATTLEYA × BOWRIALBIDA.

The issue of *American Gardening*, January 4, 1902, records the production of this interesting hybrid between *Cattleya Bowringiana* and *Lælia albida*, raised and flowered by Mr. E. O. Orpet, of South Lancaster, Mass. The plant, which is stated to be intermediate in character between the parents, has pseudo-bulbs resembling those of *L. albida*, but much more elongated. The flowers are larger than those of *L. albida*, and of a delicate lilac-red colour; the lip bordered with a deeper shade of the same colour. Its flowers are at present sparsely produced on peduncles 9 inches in length, but when the plant has gained strength the size and number of its flowers will doubtless improve.

ZYGOPETALUM MURRAYANUM.

This rare Brazilian species has recently flowered in the Orchid-houses of J. Wilson Potter, Esq., Elmwood, Park Hill Road, Croydon. The habit of the plant is similar to that of *Zygopetalum crinitum*, and the inflorescence is erect as in that species. The flowers, which measure $1\frac{1}{2}$ inch across, commence within 2 inches or so of the base of the spike. The sepals and petals are of a pea-green tinge; the lip is white, and furnished with a few purple lines at the base. The plant thrives in the *Cattleya*-house, and appears to be very free-growing, and an easy one to flower. It was figured in the *Bot. Mag.*, t. 3674. It flowered also in the Royal Botanic Gardens, Glasnevin, in January, 1900.

LÆLIO-CATTLEYA × LUCY INGRAM.

This beautiful winter-flowering hybrid between *L. purpurata* and *L. Perrini*, raised by Mr. T. W. Bond, gr. to C. L. N. Ingram, Esq., Elstead House, Godalming, is again in flower there. Its flowers are like those of a good *Lælia purpurata*, but with a labellum of the beautiful colour and form of that of *L. Perrini*, though much larger. The flower expands to a width of 7 inches; the sepals and petals are white, the former tinged and the latter veined with rose. The lip in the tube is white, and the fronts of the side lobe and the middle lobe of a rich claret-purple. It is interesting to note the alteration in the time of flowering made by hybridising. In the case of the *Lælia Perrini* varieties (not hybrids), the certificated plants have been shown from the first week in October to the first week in November; the numerous varieties of *Lælia purpurata* in May and June, with the single exception of *L. p. Mrs. R. I. Measures*, which was shown in October. The hybrid between the two, *L. × Lucy Ingram*, received an Award of Merit on January 12, 1897, and it has since regularly flowered in the month of January. The many beautiful hybrid *Lælio-Cattleyas* raised by Messrs. J. Veitch & Sons also follow the same rule, i.e., by crossing *Lælia Perrini* with earlier flowering species, the time of flowering of the progeny comes later, that is more in the depth of winter than that of *L. Perrini*, although the time of flowering of that species forms the basis. The result is much the same in the crosses obtained from the late flowering *Cattleya labiata*, the hybrids flowering in the middle of November. *Lælia × Pileheriana* (erispa × *Perrini*), however, is spring-flowering, probably because the seed-bearer was the summer-flowering *L. erispa*.

CATTLEYA × VICEROY (LABIATA × BRYMERIANA).

This somewhat showy hybrid, raised by Messrs. F. Sander & Co., has flowered simultaneously with Sir James Miller, Bart. (gr., Mr. J. Hamilton), and Sir Frederick Wigan,

Bart. The flower, which is nearly equal in size to an ordinary *Cattleya labiata*, but with a much firmer substance, gives stronger indications of that species than of *C. × Brymeriana*. But examination of the lip with the side lobes turned back clearly discloses traces of both *C. superba* and *C. Eldorado*, the parents of *C. × Brymeriana*, in the orange coloured base with a band of dark reddish-purple extending up the middle, and merging into the bright crimson-purple front lobe. The sepals are creamy-white, tinged with rosy-lilac; the petals rosy-lilac, with a more purple shade on the veining. The lip, which calls to mind that of *Cattleya Percivaliana*, is yellow at the base, with a red-purple band up the middle. The front of the lip is bright crimson-purple, with a narrow rose margin.

MILTONIA ROEZLII VARIETIES.

This fine species, which many fail to grow successfully, thrives admirably in the collection of Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), in a house kept at an even degree of warmth. That these varieties do thrive is indicated by the fact of the flowers having improved each year. At the present time some individuals of an importation received in 1896 are in flower, some of which are of extraordinary size and colour; while all of them are larger than the average. The best form of *M. Roezlii alba* has flowers over 4 inches each way, thus forming an almost perfect circle. The petals are $1\frac{1}{4}$ inch wide, and the lip $2\frac{1}{2}$ inches; the whole flower pure white, with a yellow disc with orange lines at the base of the lip. The coloured variety is nearly as large, the colour being the same tint, with a large claret-purple blotch at the base of each petal. Both are very fragrant. J. O'B.

FLORISTS' FLOWERS.

WINTER-FLOWERING CARNATIONS.

THOSE plants which flowered in autumn and mid-winter are now producing numerous side-shoots suitable for the making of cuttings, and the propagation of plants to flower next autumn should not be delayed. The shoots should measure 4 inches in length, and should not be very soft. Place the cuttings in small pots or shallow pans filled with a light, sandy soil, and sink in the plunging-bed of a dung-heated frame, and keep close and fairly moist, admitting air daily in small quantities for half-an-hour.

When the cuttings begin to grow, roots will have already formed, and the cuttings may soon afterwards be placed on a shelf near the glass in an intermediate-house, and gradually inured to the air and light. In a month, pot them off singly in 60's, using a fairly light soil, and replace the plants on the shelf and freely ventilate the house on favourable occasions. When the roots touch the sides of the pots, shift them into $4\frac{1}{2}$ -inch pots, and keep them in a house having a temperature of 55° to 60°, affording abundance of air as the season advances. They may be grown in a lower temperature, but growth will be slower, and to flower the plants early in the autumn they must be kept freely growing. A suitable compost for them after the first potting consists of good turfy loam three-quarters, leaf-mould one-quarter, together with a good addition of silver-sand or mortar-rubble, and a small quantity of soot. Ordinary manure should not be used, but a suitable artificial fertiliser should be mixed with the soil. After making a trial of several manures, I find Willis's "Carnation Manure" gives the best results when used at the rate

of $\frac{1}{2}$ lb. to 1 bush, of the potting soil. When the flower-buds begin to show, apply it in water at the rate of 1 oz. to 1 gall. of water, stirring it well before using. An application of this manure should be followed by one of clear water, when the plants require water. This manure promotes a firm, sturdy growth, and the grass assumes that glaucous hue characteristic of robust health. During the summer, stand the plants in an open position on a bed of coal-ashes; lightly dew the foliage after a hot day, but make provision for shielding them from heavy rains in the autumn. To flower them during the winter the plants should be placed in a light, airy house near the glass, and afforded a temperature of 55° to 60°, with abundance of air at all times. Of the so-called winter-flowering varieties there are many, but kinds that may be relied upon to flower well in mid-winter, may almost be counted on the fingers of one hand. I have found none to equal a variety named C. A. Dana, in colour rose-pink, calyx perfect, with long stalks from which blooms may always be gathered, while the habit is all that can be desired; it is an effective colour under artificial light. Mrs. Leopold Rothschild is a well-known capital variety, but would be still more valued if it was a better bloomer in the winter. Pride of the Market is said to be the best pink-coloured Carnation for winter flowering, and it is certainly a very promising variety; in colour a soft clear pink, calyx good, but subject to rust. Pride of Exmouth is of a salmon-pink tint, with a calyx which does not split, and it possesses stiff stems. Queen of Pinks is of the same tint as Dana, but the flower has rounder petals, which have a little more substance; a sturdy grower, and calyx that does not burst.

Of yellow-ground Carnations generally there are but few that are suitable for winter work, and the best two that of which I know anything are Jessie Godfrey, an improvement on Lady Doreen Long. Lady Poltimore is another variety that is of compact growth, has a good calyx, and the blooms open well in the winter. Of scarlets, Vicar of Exmouth is good; Winter Cheer is still hard to beat. W. Robinson is good at times; while Sir Redvers Buller, sent out as the best scarlet for winter flowering, has unfortunately not proved its worth with me. Novel in colour is Lady Audrey Buller, a satiny mauve, shaded with plum colour, and a rather tall grower. A fine crimson is King Edward VII., a good grower, nicely shaped bloom, clove scented, and good calyx; this should prove a good addition to this class of whites. Flora Hill is free, and usually affords some good flowers which are fragrant, but the petals are flimsy, while it is too tall a grower. Deutsche Brant is a very sweet-scented flower, but it bursts badly, and is an indifferent grower. A very promising white is Mrs. S. J. Brookes, the blooms having smooth, stout petals, a good calyx, while the habit is as good as can be. Then there are America, a very promising variety; also Mrs. T. W. Lawson, of sturdy habit, the blooms opening well in the winter; the stems are long and strong, and the blooms of good size; the colour is very bright, particularly under artificial light—it lacks refinement, but is nevertheless an acquisition. There is yet room for a good winter-flowering yellow Carnation. Primrose Day nor yet Duchess Consuelo can be said to be good for the purpose, though they will at intervals furnish a few nice flowers.

For giving support to the plants and flower-stems there is nothing better than the coil stakes, which are neat in appearance, of a pleasant green hue, and very durable; and as the shoots can be placed in the coils without any tying, there is a considerable saving in labour. T. H. Slade.

LÆLIA ANCEPS CHAMBERLAINIANA.

OUR illustration (fig. 27), which our artist has verified by measurement of the flower, represents the finest form of what is known in gardens as the "grandiflora" section of *Lælia anceps*, which originated some years ago in the gardens of the Right Honourable Joseph Chamberlain, Highbury, Moor Green, Birmingham, from whose collection we have remarked

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr., Mr. Stables), at the Royal Horticultural Society's meeting on January 14, when it was awarded a First-class Certificate, and afforded us the opportunity to obtain an illustration.

BUENOS AYRES.

THOUGH I was unable to land at Rio Janeiro on my way to Chile, and so lost my chance of visiting the celebrated Botanic Gardens there,

cities of Europe in the cleanliness of its streets, the number and beauty of its public squares, gardens, and boulevards, most of which have, I believe, been planted by Mr. Thays.

I was surprised to find that though several species of Palm grow well in this climate, the Oriental Plane is the best shade tree in the town, whilst outside it Australian trees, such as *Eucalypti* and *Casuarinas*, grow so fast that there are already many of 10 to 12 feet in circumference, and they are rapidly altering the



FIG. 27.—LÆLIA ANCEPS CHAMBERLAINIANA.

on it on several occasions. It gives a striking proof that extraordinary qualities of size and colour are maintained, for it has varied but slightly in either since its first appearance. The sepals and petals are of a soft rosy-lilac colour. The base and side lobes of the lip are marked with purple lines, the middle lines being continued by the orange-coloured callus. The front lobe of the lip is of a glowing crimson-purple, and the whole flower of very fine form and substance. It was shown by

I was much pleased to find at Buenos Ayres a garden which, though only formed about six years, has already a most interesting collection of plants, and, under the very able management of Mr. Charles Thays, the director, is likely to become one of the first in South America. This gentleman appears to combine scientific knowledge with good taste and judgment, and has been well supported by the municipality of Buenos Ayres, a town which is already far superior to many of the capital

features of the country round Buenos Ayres, which has very few indigenous trees.

The Botanic Garden, though not large, is nicely laid out, and the soil, naturally sandy, has been improved by the addition of much vegetable mould. Its principal feature is the way in which the indigenous trees and shrubs of the various provinces of Argentina, from the subtropical regions of Tucuman, Catamarca, and Misiones, in the north, to the arid wastes of Patagonia in the south, have been grouped

in separate divisions. Besides this national collection, there is a good selection of the trees and shrubs of North America, Europe, and Asia, arranged geographically, and a considerable collection of plants and shrubs arranged in their natural orders for the use of botanical students. Among the trees which struck me most by their beauty was *Tipuana speciosa*, Benth., a very handsome flowering tree from the north of Argentina, which attains large dimensions. It has been the subject of a special article by Mr. Thays in the *Revue Horticole* (1892, p. 462), and the seeds have been freely distributed by him in Algeria and the South of Europe, where it is hardy. *Juglans australis* is a fine native Walnut, which I had not previously seen, and which would also be probably hardy in South Europe. Another striking small tree or shrub is *Boeonia frutescens*, which has very handsome pinnate leaves, so unlike those of *Boeonia cordata* that I could hardly believe it to be congeneric.

Poinciana Gilliesii is one of the characteristic shrubs of the country, and seems to grow over a large area, as I saw it in the pampas near San Luis. *Habenaria montevidensis* is one of the few terrestrial Orchids of the country, and seems a very robust and free-growing plant. *Bromelia sceptrum* is a striking plant, which might be tried out-of-doors in the South of England; as well as *Dyckia aurantiaca*, which was new to me. *Parkinsonia aculeata* is a very pretty Argentine shrub that I do not remember to have seen in Europe; and *Bauhinia candicans*, *Daubentonia Tripetii* (Sesbania), and (I will not be sure of this name, or of the next) *Pithecoctenium convolutum* [?] are all deserving of cultivation in any situation not liable to more than 6° to 8° of frost.

I saw among the Iridaceous plants two which were new to me, and both were worth growing—*Cypella Herberti*, a bulb which I also found wild near the town; and *Sisyrhynchium convolutum*, a robust, tufted herbaceous plant, with good-sized yellow flowers, said to come from Patagonia, and probably hardy in England.

Mr. Thays published a long list of seeds which have been grown in his garden, and which is well worth consulting by those who are interested in the native plants; and I wish him every success in his labours, which must greatly benefit his adopted country. *H. J. Elwes.*

CINERARIAS IN THE OPEN BORDER.

It is not often one can see between 300 and 400 *Cinerarias* planted for flowering in the open border, but having planted that number last May, and enjoying the effect it has since produced, it is quite evident to me that many of our north wall borders can be made to produce an effect seldom seen, and quite different from the usual style of border flower gardening. The somewhat heavy appearance of the *Cinerarias* was relieved by introducing *Humea elegans* and *Grevillea robusta* in an irregular manner about the border, these two contrasting well with the foliage and habit of the *Cinerarias*. The forms used were of the florist's type, *C. stellata* and *C. cruenta*, and by mixing them the flatness of the whole was broken up; *C. cruenta* being the tallest, *C. stellata* of medium height, and the florist's type the dwarfest. No special treatment of the soil is called for beyond digging and manuring. The seeds should be sown in pans in January, and when the first rough leaf has expanded they should be transferred singly into small 60-sized pots, and placed on a shelf in the greenhouse, or in a frame where they

get plenty of light and a fair amount of air. The seedlings soon make sturdy little plants, and in a few weeks are ready to be potted into 48-size pots, from whence they are to be planted out in the border. During the months of March, April, and the beginning of May, no place suits *Cinerarias* better than cold frames or pits, where the minimum temperature is not less than 40°, and the maximum 50°. Should the highest allowable temperature be approached, the lights must be pulled off the frames. Warm rains do the plants much good, and assist in keeping them free from aphids.

No fear need be entertained about the plants getting too much moisture at the root, a sturdily grown *Cineraria* having its foliage so arranged as to throw off much of the rain falling upon it. Some of the plants thus treated (of the *cruenta* and *stellata* type) will make panicles of flowers nearly a yard through, and the hybrid or florist's section the same size in proportion. The frost of October 26 and 27 last apparently did not hurt our plants, owing to the protection afforded by overhanging trees, so that on November 1 they were affording a wealth of colour in spite of heavy rain and dense fogs.

A few of the plants that were for some unexplainable reason very late, were carefully transferred to pots, kept close, and quite cool. These gave a good display in the conservatory far into the winter. These plants have practically given no trouble, beyond the potting-up, and an occasional application of water during the summer—a contrast to the tedious everyday attendance needed by *Cinerarias* when grown in pots. *J. W. Miles, Isleworth.*

BOOK NOTICE.

MONOGRAPHIE DER GATTUNG SORBUS. Von T. Hedlund (Stockholm, 1901).

IN this work of 145 quarto pages the author has given a careful classification of the genus *Sorbus*, under which he includes as sections, *Cornus*, *Aucuparia*, *Aria*, *Torminaria*, *Chamaemespilus* and *Aronia*. He enumerates 55 species, and many forms and hybrids. All the species mentioned by him are included by many authorities under the genus *Pyrus*, but *P. alnifolia*—a Japanese species recently introduced to British gardens—is regarded as belonging to a genus apart, viz., *Micromeles*. Altogether 155 species, forms, and hybrids are carefully described, and 34 figures of leaf outlines and character of pollen help to elucidate the text.

The German, in which the monograph is written, is sometimes unnecessarily involved, and is consequently at times difficult to understand. The following sentence may be taken as an example in proof: "Die zusammenfassung derjenigen in der Natur entstandenen Pflanzen, welche—von den Anomalien abgesehen—dieselben konstant erblichen Abänderungen anweisen können, stellen die niedersten Einheiten des systems, d.h. die Sippen im Sinne Wettstein's dar." This phrase appears to mean that to treat collectively plants, growing under natural conditions, which—apart from anomalies—are subject to the same inherited variations, represent the lowest units of the system, i.e., the "Sippen" as understood by Wettstein. *Sippe* means a clan, and in botanical parlance there seems to be no exact English equivalent. During the printing of the work, however, the author found a word which he preferred, and he suggests in a footnote that *Elementar Art* (primary species) should be substituted for *Sippe* wherever it occurs in his pages.

A good deal of importance is attached to the character of the pollen—if it is irregular in shape and colour, it is assumed that the plant which furnished it is a hybrid. Some undoubted hybrids, however, have fairly regular pollen, and bear fertile fruits—for instance, the Scarlet Chestnut of gardens, which is a cross between the Horse-Chestnut of Europe, and the Scarlet Buck-eye (*Aesculus Pavia*) of the United States.

Our author recommends the raising of large numbers of seedlings of all the different forms, species, &c., of *Sorbus*, and the careful study and comparison of these, in order to arrive at just conclusions. In studying a group, he says one must begin from below and work upwards. In an angiospermous group it is of first importance to ascertain clearly, to what extent in each instance, different conditions have influenced the plant in size, habit, &c., in its development from seed. How important this method is, he proves by stating the fact that in some of the lower *Algae*, the different modifications of one and the same species have been generally treated as distinct genera, and even placed in different families. Unfortunately with trees much space would be required, and a long series of observations extending over many years would be necessary.

Lack of space prevents our giving Hedlund's key to the genus—it extends to nearly a score pages. Many new names occur, amongst which we mention the following:—

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| <i>Sorbus commixta</i> , Hedlund | = <i>S. Aucuparia</i> var. <i>japonica</i> , Maximowicz. |
| <i>S. parviflora</i> , " | = <i>Pyrus micrantha</i> , Franchet & Savatier. |
| <i>S. splendida</i> , " | = <i>S. sambucifolia</i> , Koehne. |
| (This is probably a hybrid between <i>S. microcarpa</i> and <i>S. Aucuparia</i> .) | |
| <i>Sorbus sibirica</i> , Hedlund | = <i>S. Aucuparia</i> var. <i>glabra</i> , Trautvetter. |
| <i>S. decurrens</i> , " | = <i>S. lanuginosa</i> , Kitaibel. |
| <i>S. Meinichii</i> , " | = <i>S. Aucuparia</i> × <i>fennica</i> . |
| <i>S. quercifolia</i> , " | = (?) <i>S. longifolia</i> × <i>Aucuparia</i> . |
| <i>S. persica</i> , " | = <i>Pyrus flabellifolia</i> , Decaisne. |
| <i>S. salicifolia</i> , " | = <i>P. rupicola</i> , Syme. |
| <i>S. incisa</i> , " | = <i>P. scandica</i> , Babington. |

P. pollveria, L., or as it is now called in *Kew Hand-list* of the Arboretum, *P. auricularis*, Knoop, does not fulfil Hedlund's idea of the generic characteristics of *Sorbus*, and so is only incidentally mentioned on p. 84. It is a hybrid between a member of the *Aria* group and a cultivated Pear.

P. malifolia, Spach, another hybrid of similar origin, the author of the monograph thinks has disappeared from cultivation. We have, however seen it both in the Paris Botanic Garden and at Kew. *Geo. Nicholson.*

IMPROVEMENTS IN HARDY PLANTS.

THE following important paper was read at a meeting of the Horticultural Club on Tuesday, Jan. 21, by Mr. Amos Perry.

(Continued from p. 62.)

Now I will hastily run through some of the most important genera that I think should be dealt with, and the first on the list will be the—

Asters, the capabilities of which are endless, and I believe before many years they will become one of our most popular families and be grown by millions, both in pots and in the open. In a very short time we shall have as many pinks and reds as we have blues and whites, and Perry's Pink, one of the *lævis* section, is a fine one to work from, the colour being a good, bright pink and the first of this section of a good colour. It is a seedling raised from Miss Stafford, a Winchmore Hill variety. Great care must be exercised in raising Asters to keep to the stick-at-home varieties. Do not touch those that run all over the border. A favourite group of mine is the *cordifolius* section, forming sheaves of the most graceful flowers, and favourites with everyone for cutting. I find this group is far better grown in partial shade.

The *Amellus* group will take a first place for pots, their natural habit lending themselves to this mode of

treatment. The flowers are large and of every shade, from the richest violet imaginable to very pale blues. The white we have is of no use horticulturally, but what the progeny will be I do not know. In Perry's Favourite we have the first good pink in the *Amellus* section, and one that must become popular. There is no question that from this may be obtained varieties brighter in colour and invaluable in every way.

A good type of *Aster* to work from is *Esme*, a seedling of the Rev. Wolley Dod, 3 feet high, with a large spreading head, pure white, and remarkable for lasting a very long time in bloom. One can imagine what a double-white of this description would be worth, and it is coming. We have already semi-doubles, and one fully two-thirds double, and I am looking forward to the coming season for many others of this character. A race of good double *Asters* will be a grand addition to our list of decorative plants, and also for pots, and it is only a question of time to obtain them.

Anemone japonica is in very successful hands, and great improvements have taken place, and many more to follow. Queen Charlotte, Mont Rose, and *Rosea superba* are grand. I should like to see the Parsley-leaved variety taken in hand. The foliage is wonderfully effective, but the flowers very poor.

Agrostemma flos-jovis is capable of great improvement. It is a good all-round plant for cutting or decoration, and there is no reason why we should not get a double. There used to be a large double variety of *A. coronaria* thirty years ago, which I believe is now lost.

The common white *Arabis* has made a great bid for popularity. The double form is splendid for cutting, lasting well into summer. We have several species with rose and pink flowers. Why cannot we get this colour into the double one?

Asphodels form a very characteristic group, and I think the Asiatic and European species might be brought together with very good results.

Aconitums offer many opportunities for improvement. A good yellow *A. japonicum*, or even a yellow *A. Napellus* would be a great acquisition. Do you think it possible to obtain them? I say, yes.

The capabilities of the *Aubrietia* have been fairly tested, and we have now a good range of colour, but there is no reason why they cannot be still improved both in size and colour.

The *Calystegia*, I believe, is capable of a great transformation, and I see no reason why flowers of immense size and of almost every shade of colour cannot be obtained in the perennial varieties. If the annual varieties would not produce these results, we might seek the assistance of its American ally, the *Ipomoea*.

Campanulas.—We all know their capabilities, and there is not a single species in the whole race that cannot be improved. As a rule, the great bulk are raised from seed, no attempt being made either to discard the bad forms or to retain the good ones, and many are becoming so poor as to be not worth growing.

A few good hybrids we have, Van Houtte, G. F. Wilson, and Henderson being still among the best. I should like to see this group taken up by two or three enthusiasts, as they are so easily done, requiring little attention, and the results quickly seen.

Cheiranthus alpinus, the alpine Wallflower, would well repay a little attention. Crimson, red and yellow varieties, would be very effective, and I think can be obtained.

Chrysanthemum maximum has shown a remarkable development, and some of the flowers are really superb. For decoration or for cutting they are matchless, and still I believe can be much improved. Some of the more recent seedlings have shown distinct signs of doubling, and I shall not be surprised any day to hear of one being raised. I have just read that American seedlings are showing signs of colouring, but I am doubtful about it.

The Shasta Daisy, which has been hurled at us from the other side of the Atlantic, is described as being a marvellous production, but whether the plates are overdrawn or not, I cannot see that it will bear any comparison with what we have already got. I like the name Shasta Daisy, and shall certainly use it.

Coreopsis lanceolata I think would pay well for a little attention, seeing we have some perennial species with rose-coloured flowers, which we could fall back upon, providing the annual ones could not be induced to assist us in obtaining different shades from those already in cultivation. A red or rose-coloured variety of *Coreopsis lanceolata* would find many admirers; a great deal might be done in selection, as I do not consider the present one anything like so good as the one I knew twenty years ago.

Echinacea purpurea has degenerated considerably during the last twenty years, and many of the strains now offered are not worth growing, whilst the good ones are among the best of our autumn perennials. The colour is being improved upon each year, and reds and purples will soon take the place of the poor varieties so often seen.

The *Erigeron* contains some good material for further developments, and in *E. speciosus* we have a very useful plant for all purposes and a great favourite, as it lasts so long in bloom. Among the perennial species we have white, orange, and flesh, and among

the annual varieties yellows. Transfer either of these shades to the speciosus, and the result would be very pleasing. I find the "Composite," as a rule, especially after the first break, very easy to cross.

Eremurus, white, lemon, and apricot varieties of robustus are in existence, and many other shades of colour will, no doubt, follow, but a man wants to start very young if he wishes to see the result of his labour in hybridising this genus.

The species of *Geranium* are, as a rule, somewhat weedy, but there are some among them remarkably showy, and could very easily be improved upon. The white variety of *G. sanguineum* is one of the very few varieties we have in this family.

The *Geums* are somewhat important, as they last a long time in bloom, are easily grown, and very variable. There are now several good varieties of *Heldreichii*, *montanum*, and *coccineum plenum*, but these can be improved upon very considerably.

Gypsophila paniculata.—The double variety, which was shown before the Royal Horticultural Society during the past season, I think will become a very good plant, providing it can be propagated, but I have never been very successful in propagating this by cuttings, and I am somewhat afraid of the double.

In the *Heleniums* we have two or three good varieties, the best of all without a question is *H. pumilum magnificum*, and this, I consider, is one of the best twelve hardy perennials in cultivation; it is in flower well for at least four months, and during the drought of the past season was a mass of flower. *H. striatum* is a plant that will well repay a little attention, and I can see no reason why a crimson could not be obtained with care by selection. I have raised many, all striped more or less, but no self-coloured flowers.

Helianthus has been worked upon for some years past, and the new *Helianthus tomentosus* (certificated under the name of *mollis*) is excellent for crossing purposes. It is certainly the most characteristic in the family, distinct in foliage and formation from any of the others, and one that does not run about.

Heliopsis levis is still capable of further improvement. The colour is unique at that season of the year, and for cutting it is invaluable, but it is not a good habit. A variety 2 feet or 3 feet high, covered with rich orange flowers, would find many admirers.

The Oriental Christmas Roses are very useful, but I do not think can be much improved upon; they are no good for cutting, and never will be, but in a shrubby border they are very useful.

It is possible to get some fine varieties of *Hemerocallis*, but they will have to be remarkably distinct to find favour with the public. Commercially there is not much value in them, I suppose from the fact that they cannot be killed!

Among the *Heucheras* there is a possibility of very great improvement. A crimson *H. erubescens* would make a charming plant, and as these are easily crossed, and the results quickly seen, would be a nice group for some impatient enthusiast to take up. *H. zabethana*, a Continental introduction, is one of the first hybrids we have, and a very good plant it is. *H. sanguinea* appears to be degenerating. Even the variety *splendens* does not come up to the standard of what I grew in my private garden at Tottenham. Originally there were six plants—one died on the road—brought by the late Andrew Murray from Lower Mexico, which he gave to me. The description he gave of this species growing wild was of a plant 3 feet or 4 feet high, with flowers more than double the size, and scores of branching spikes emanating from quite small clumps; and when he saw them at Tottenham for the first time he was more than disappointed, and did not consider the plant worth the trouble he had bestowed upon it. The spikes he saw at Tottenham were far more beautiful than those usually seen in English gardens.

The *Irises* present a fine field for the hybridiser, although they are not so easily managed as one might suppose. They have always been popular. We have had a few new varieties of *germanica*, a good many new varieties of the *olbiensis*, and a few hybrids of *Max Leichtlin* and Sir Michael Foster, and a few others are the net proceeds of the last twenty years. There has never been much done in the way of hybridising, *Max Leichtlin* being one of the first. One of the best of his was *Warei*, a cross between *I. Susiana* and one of the *germanica* sections; but he does not appear to have been very successful with them. Sir Michael Foster has many hybrids, some most charming, and he appears to be crossing everything. His "monspur" sections are good, the result of crossing *Monnierii* and *spuria*. "Parsam," a cross between *paradoxa* and *sambucina*, is very pretty, and there are many others that we know little about. I had almost forgotten the *Iris Kiemperli*. A marvellous change has taken place in these since the late Baron von Siebold introduced his first set from Japan. These had quite small flowers, and were not worth growing by the side of those now in cultivation. I believe the first information we had of these large ones was at Tokenhouse Yard, when Messrs. Protheroe & Morris offered some thirty or forty clumps, one or two plants of each variety, accompanied with the usual Japanese drawings. These caused quite a sensation, and realised several pounds a clump. The Japanese were not slow

in sending over many more, and for the last twenty years a regular trade has been done in them; but I do not think we have any more varieties now than then—*Iberis*, *Inulas*, *Lathyrus*, *Liliums*, and *Liriaris*, we must pass. All are good popular genera, from which improved varieties could be obtained.

The *Megasea* has received a fair share of attention. Mr. Smith, of Newry, having raised a great number of seedlings, some very interesting, but there are not enough whites and light shades of colour. Unfortunately, this group has never been very popular with the public.

The Evening Primroses (*E. Enothera*) present many opportunities for hybridising and selection. Sooner or later we shall have some one finding a white microcarpa or fruticosa, both of which would be eagerly sought after, and if whites, why not roses and reds? Has anyone seriously attempted to cross these species? I have never heard of one, and I feel sure they would pay well for a little attention.

I must not pass the *Pentstemons* without mentioning *P. heterophylla*, a lovely Californian species of a beautiful blue colour. I see no reason why we could not get blue ones among the hybrids, seeing both are very similar in growth.

Potentillas.—What a wealth of colour we have in the hybrid *Potentillas*! The combinations are marvellous, but all spoil by the habit of the plant. Could we not obtain a new set, less rampant in growth, and erect? If we could, it would be a great boon, for we have no other genus possessing so much brilliancy of colour as these.

Scabiosa caucasica is now producing a nice range of colour, and as the plants can be propagated by division, will become very useful. Unfortunately, they are slow in increasing, and it will be some years before we see much of them. Some of the new shades are delightful.

The *Spiraeas* are an important genus, and there is no question that many improvements can be made in them, especially in point of colour. A coloured variety of *S. japonica* or *S. Aruncus* would cause quite a sensation. I would not say they can be obtained, but I know they are well worth trying for.

We have a good pink variety of *Spiraea gigantea*, and I remember having offered to me a bright pink variety of *S. filipendula*, but such a fabulous price was asked that it was impossible to secure it. Twenty-five years ago this class of plant was at a very low ebb. What became of it I never knew, but I can see it in my mind's eye now, and should like an opportunity of obtaining it.

Sedum spectabile contains many points of great merit, and if we could get a batch of seedlings, improvement only in colour would be a great commercial success.

The *Statice* are becoming more popular now attention has been given to selection, &c. In *S. limonium* we have a very variable species, varying from the purest white to all shades of blue and pink, with dense heads of flower 2 feet across. The individual flowers are smaller than those of *S. latifolia*, but far more graceful for cutting. These are much sought after for this purpose.

There are hundreds of other genera that could be mentioned, all of more or less interest, and from past experience with other groups I feel sure similar results could be obtained. It will be useless for anyone to take up this matter unless it is done systematically, keeping to the object in view.

There must be nothing left to chance, as the cost of planting out, say, 1,000 *Aster* chance seedlings is great, especially if you get no results; whereas twenty carefully selected might produce one or two worth keeping, if only for further trial. One is not likely to get desirable novelties the first time of asking. It is a question of close watching and perseverance, and if only one or two are taken up by anyone here to-night with an idea of improvement, my work this evening will not have been thrown away.

CALIFORNIA.

PINUS INSIGNIS.—Mr. R. W. ADLAM, in the *Gardeners' Chronicle* of December 31, writing from Johannesburg, asks whether the timber of *Pinus insignis* has any commercial value. Thousands of acres around Monterey are covered with this Pine. I have never heard of it being used for any other purpose than that of fuel. Owing to its quick growth, its timber is not durable enough for building purposes; it decays quite rapidly after being cut.

During the past two or three years the *Pinus insignis* has been attacked, especially in private grounds, by a beetle, which I believe flies from one tree to another. I have found the remains of wings where they enter the tree. This beetle bores into the tree close to the

ground in a downward direction; it no doubt breeds, afterwards the young burrowing between the bark and wood, until after a year, or sometimes a little longer, the tree succumbs. I have noticed that trees from fifteen to twenty-five years of age are more susceptible to attack from this beetle than at any other age. *Thos. Lee, Supt. of Hotel Del Monte Grounds, California.*

IPOMCEA AUREA.

This was described by Kellogg in the *Proceedings of the California Academy of Sciences*. It is indeed a noble plant, but a shy bloomer I am afraid, unless it can get very intense heat in summer. It bloomed with me two years ago, five years from seed, and never again, probably because I was obliged to transplant it, and for a year it hardly gave sign of life.

IPOMCEA CHRYSANTHA,

said to come from Fernando Po, grows exceedingly rank here, but not one flower has ever appeared.

DOUBLE-FLOWERING PEACHES.

Not only is it a common occurrence for these to bear fruit, and the seeds to germinate freely, but it is worth remarking that seedlings will bear flowers of shades different from the parent plant, in many cases pure white, variously striped, and more or less intense crimson flowers, appearing on the same seedling.

CANNA MRS. KATE GRAY.

There is no mistake in my correspondence published at p. 366 of the last volume of the *Gardeners' Chronicle*. The facts pertaining to the origin of this variety are exactly as stated in my correspondence, namely, it was a plant of Italia which was fertilised with the pollen of Madame Crozy, and not *vice versa*, as asserted by Mr. W. Muller. Furthermore, it may interest your readers to know that it was through extraordinary perseverance that the result was obtained. The employer of Mr. Morse did not like his time to be taken up by such breeding work, and exacted that strict account should be kept of the time employed. Well, it took 900 hours of patient work to obtain that lone seed, from which Mrs. Kate Gray was born. *Dr. F. Franceschi, Santa Barbara, Cal.*

ALPINE GARDEN.

PRIMULA MEGASEEFOIA, Boissier.

This fine Primrose, figured in *Gardeners' Chronicle*, April 6, 1901, is now, at the end of January, in full flower in my garden in a cold frame. It was given to me last year by Miss Willmott, about the time of the April show in the Drill Hall, where it was exhibited for the first time. It has somewhat the habit and stature of *P. rosca*, but the flat leaves are rounder, the flowers are larger, and have more red in their colouring. In E. Boissier's *Flora Orientalis* (vol. iv., p. 26) only one habitat is mentioned, "moist, shady gorges near Rhizch (a maritime town, about halfway between Trebizond and Batum), at an elevation of 900 feet, flowering in May." The plant is now offered by the dozen by Carl Sprenger, of Naples, who tells us it is a native of Persia, and that it flowers "in winter and spring, and sometimes in autumn." It is just this uncertainty of season which may prove a drawback to its open-air cultivation in England. It will probably prove as hardy as *P. denticulata*, but, like that species, be liable to be

enticed into premature flowering when the early autumn is warm and wet, and so get its flowers spoilt by winter. In that case it will require some similar management to retard the autumn growth. The species is, however, well worth the attention of amateurs as a good late winter greenhouse plant, even if it cannot be persuaded to defer its flowering to what Boissier says is its proper season, May. *C. Wolley-Dod, Edge Hall, Malpas, Jan. 26.*

LILIES.

CULTURAL DIRECTIONS.—A good, medium soil, free from ground insects, is, as a rule, the most congenial soil for all Lilies. There are some species of Lilies which like more moisture than others. The soil at Mr. Arderne's is free, well drained, and the constant watering the Rhododendrons get makes the place an ideal one; and what can be more charming than to see rising from the midst of Rhododendrons such Lilies as the varieties of *L. pardalinum*, *L. auratum*, *L. excelsum*, and many others? The ground is shaded, the bulbs are kept cool, while absolute freedom for the tops and foliage is secured. Lilies should not be coddled, but planted where they are to flower. Should success attend the selection of the spot, a new pleasure is introduced into the garden; should there be a failure, this is no more than happens in one's daily routine—try again. A real gardener never gives up, but goes on till he succeeds.

On receiving Lily-bulbs, examine the base; if sound, all is well, but if the scales fall away from the base, you can have no success. There may, however, be some healthy parts on the scales; from these you have a chance of getting bulblets, by laying them on a compost of soil mostly clean sand, and covering over with the same material, placing the pot, box, or kerosene-tin in a shady place, and keeping the soil moist, but not wet. If you buy your bulbs, see that the outside scales are healthy and firm. If you import bulbs, caution the sender as to the degree of moisture in the moss surrounding the bulbs, as it often happens the sphagnum-moss used is too wet, and in consequence the bulbs are apt to rot. I have seen good consignments of Lily-bulbs packed in common sawdust of such wood as white deal. Avoid charcoal and cork sawdust; these absorb the goodness out of Lily-bulbs. A heavy soil may suit some of the moisture-loving Lilies, but a sour soil or a water-logged soil is bad. Drainage is indispensable for the successful culture of all Lilies; if a collection of Lilies be grown in the same bed, put the bed, if possible, on a sloping bank, those which love the dry soil highest up, and graduate down to the moisture-loving ones at the lower part of the bed. Lilies, such as the varieties of elegans and some others, like a rather dry ridge, and with deep planting, will stand a good deal of drought.

Give Lilies more or less shade from the midday sun, and shelter them as much as possible from severe winds. The great aim should be to keep the soil cool, and this may be best attained by a mulch of the preceding year's leaves of trees, rotted, or laying stones on the surface, there being no objection to plenty of sand-stones heaped on the beds. Under such conditions, moisture-loving Lilies may be grown to perfection, bearing in mind shade and watering. The Lilies which do well in a partially dry soil, will do better with than without stones on the surface. The stones ensure coolness, and conserve moisture. I am strongly in favour of blocks, large and small, of sand-stone amongst which Lilies should be grown, and I am almost sure this

mode of growing them would be attended with as much success as if planted amongst Rhododendrons. It must not, however, be forgotten that shade from the midday sun—indeed, the fierce rays at any hour of the day—should be avoided, and shade in Cape Town is as good as full exposure in Europe.

Lily-bulbs, when out of the ground, should never be exposed to the atmosphere, or the scales will become flabby, and this means a loss of vitality, and often the cause of failure; while some Lily-bulbs when much exposed to the atmosphere will make no top-growth the first year. They are not however, resting. If they are not dead, they will be found working underground, and will make a leaf-growth the following year. I saw some *L. auratum* in kerosene-tins the other day in a very crippled condition. On examination, I found this arose from the bulbs being partially uncovered; the result could not have been otherwise. Had the bulbs been a few inches below the surface, a very different state of things would have happened; no chance for the root-stalks, and the stem was drawing on the bulb-roots, a very unfair thing for the bulb. It was doing double duty, and this was not its nature. If a bulb, after a reasonable time, does not throw a shoot, scrape down carefully, and find whether dead or alive. Mr. Chalwin, of the Cape Town Botanic Garden, in my presence, dug up some *L. longiflorum* which had made no top-growth, notwithstanding which they had actually increased in number, both in large and small bulbs. There did not appear any reason for this freak of Nature, but here was a lesson not to judge hastily, and the same happens with many other bulbs. I remember a whole bed of *L. testaceum* serving me so, and I recollect also a bed of Angels'-tears Daffodils, which I had collected on an island in the Bay of Vigo, in Spain, serving me in like manner. In both cases, the bulbs when dug up were in splendid condition. There must have been a reason in both cases, as also in that of Mr. Chalwin's *L. longiflorum*, but why they should take a year in Mother Earth, without calling in the aid of the atmosphere, is one of those questions we may speculate upon, and not be much the wiser in the end.

All exporters of Lily bulbs are fully aware of the necessity of keeping the scales plump, hence their mode of packing. In the short run from England to the Cape there should be no difficulty in getting out the bulbs in prime condition.

There has been a good deal said and written on the subject of disease in Lilies; it comes on the foliage like Potato-rust, and in all such cases these leaves should be removed. The Bordeaux Mixture will stop it. This disease, I am informed, is not unknown amongst wild Lilies. It does not, however, appear to affect the bulb. Disease produced from manuring is quite another thing. I am told there is an insect which eats out the centre of a Lily stem, but in the cases submitted for examination, showed that the Lilies had not been properly treated.

Nearly all Lilies like a good, rich soil to grow in, but not a freshly-manured soil. It is a custom with some, when the Lily has no top growth (this we call being at rest, but I am doubtful if a Lily or any bulb is ever actually at rest) to mulch with cow-manure, dried and rubbed through a sieve, and leave the rain to wash the fertiliser down to the roots. The Japs at this time give a little liquid manure, made from night-soil, once a month, and stop as soon as the Lily-top appears above the ground. It is to be remembered that the Japs are all but vegetarians. The nearest, there-

fore, to their liquid manure will be that made from the droppings from the cowshed, and the liquor should never be darker than stout. The Lily bulb, as I have already said, is really nefer at rest, hence the Japs feed the young roots that they may the better earry the flower-stem and reproduce themselves. The Japs care nothing for Lilies beyond the money they can make from the sale of the bulbs, or as an article of diet. P. Barr, in "Cape Times."

In fine size and shape, it has some resemblance to *C. × Beckmanni*, but in point of fact there is nothing comparable with it. It is probably a second crossing, which has progressed and developed beauties not seen in the other members of the batch. The upper sepal is emerald green at the base, and white in the upper part, the middle and basal area bearing fine blackish-purple blotches, the middle space between the blotches and the white margin

France it was condemned as being useless by all the leading nurserymen. Yet at the present time it is recognised as being one of the most valuable flowering plants, and besides the large numbers grown in France, many plants are furnished by English growers. Its re-introduction to France is due to M. A. Truffaut, of Versailles, who when visiting England a few years ago told me that the plant was no good, but on seeing some well-grown plants, exclaimed that he had never seen it so beautiful before, and was induced to make another trial of it in France, with the result that he has built a range of glass-houses specially for its cultivation; and although he now cultivates large quantities, English growers receive extensive orders, both from France and Germany. It is now unnecessary to enlarge on the merits of this capital plant, but a few remarks on its cultivation may be of service.

In the first place, it is so persistent in flowering that cuttings are with difficulty obtained, and many cut off the flower stems with the idea of getting the plants to start from the base, with the result that they do start, and begin to flower again; whilst if allowed to flower from the original stems, the buds at the base will remain dormant till the flowering period is pretty well exhausted, and when they do start good cuttings are readily obtained. There is no difficulty in propagating the plant, as with ordinary care almost every cutting will make roots. The most important point is to pot them off as soon as they are fit, and keep them growing without a check. Although they do not fill the pots with roots like some varieties, they like pot-room, and a good rich compost. In the earlier stages of growth plenty of warmth may be applied, and later on a moderate temperature with plenty of light and fresh air; the plants must never be crowded together after they are well established in their flowering pots; manure-water may be used freely.

VARIETIES.

In addition to the original variety, we now have some distinct sports. The "Turnford Hall" variety, which has almost pure white flowers may be regarded as the best and most distinct of these. The flowers are almost pure white, having only a slight shade of pink on the under side of the petals; the flowers stand up well, and are as abundant as those of the original. The Gunnersbury variety, "Mrs. Leopold de Rothschild," has flowers of a paler shade of pink than the parent, and the racemes are closer, the flowers hold on more persistently, and with age they assume almost a leafy character instead of falling. The first white-flowered sport, Caledonia, is very distinct, and though not quite so vigorous as the type, it may improve; and to those who have not succeeded with it I should say, "try again." It may be noted that this variety produces more female flowers than any other variety referred to, but I have not yet found it to form mature seeds. A. Hemsley.

BILBERRIES AND THE LIKE. — Mr. MUNSON of the Maine Agricultural Station has published a bulletin relating to the genus *Vaccinium* in its horticultural aspects. After dealing with the literary history of the genus, the author proceeds to detail the methods of cultivation. In the State of Maine alone there are seven factories for canning Blueberries (*Vaccinium corymbosum*), whilst the Cranberries (*Vaccinium macrocarpon* and *V. Oxycoccos*), must be grown on a much larger scale if we may judge from the large quantities that come into our markets. A botanical description of the several species adds greatly to the value of this excellent monograph.



FIG. 28.—CYPRIPEDIUM × MRS. W. MOSTYN.

CYPRIPEDIUM × MRS. WM. MOSTYN.

THIS fine Cypripedium (fig. 28), which was pronounced one of the finest hybrids of its class, and awarded a First-class Certificate by the Orchid Committee of the Royal Horticultural Society on January 14, 1902, when it was exhibited by its fortunate owner, F. Wellesley, Esq., Westfield, near Woking (gr., Mr. J. Gilbert), has puzzled experts to decide what its parentage might be, for its features seem to convey the best qualities of several species and hybrids, and especially of *C. × Calypso* Oakwood variety, which may have been one of the parents.

being of a soft rose colour. The petals and lip have a yellow ground, spotted and tinged with chocolate-purple, the surface being very glossy.

BEGONIA GLOIRE DE LORRAINE.

THE cultural requirements of this beautiful winter-flowering plant are becoming better understood. It is pretty well known that it originated in France, M. Lemoine being the raiser, and after being sent to England and receiving a First-Class Certificate from the Royal Horticultural Society, it was taken up by many growers, most of whom failed to do any good with it; and in

The Week's Work.

FRUITS UNDER GLASS.

By JAMES WHYTOCK, Gardener to the DUKE OF
BUCCLEUCH, Dalkeith.

Melons.—The sowing of Melon-seed before the middle of January is attended with only partial success unless suitably constructed and well-heated Melon-houses exist in which to grow and fruit the plants. As a mode of sowing, drop two lumpy bits of moderately dry loam into 3-inch pots; put two seeds in each pot, and, without affording water, plunge the seed-pots in a bed having a bottom-heat of 80° or 85°, and as soon as they germinate, bring them near the glass to prevent the drawing of the plants, still withholding water—for the little plants at this season will thrive with comparatively little moisture—whereas, should the soil get wet and be kept in that condition they will do no good. It is not good practice to shift into a size larger pot to grow on, but leave the stronger of the two in the 3-inch pot until leaves and stem are stoutly developed; then plant in the fruiting quarter, which may either be a bed resting on bottom-heat of 85°, or in 12-inch pots plunged in bottom-heat. If planted on beds, do not make a big body of soil at this season, but rather put up a narrow ridge of moderately dry soil, mixed with little bits of lime-rubbish. Melons like a good heavy soil, and in the absence of that, use turfy loam mixed with an approved kind of artificial manure; make the ridge firm, and when the soil is warmed throughout plant on the top of the ridge at a distance of 2 feet apart, and apply no water after planting, at this season the moisture in soil being probably enough for the plants till they have made a fair start. The mean temperature of the air should be 70°, 10° to 15° higher in the day-time; and let the paths and all other surfaces be damped frequently, guarding against the drying effect of fire-heat, and keeping generally a moist growing atmosphere.

Cucumbers.—Plants raised from seed sown at the beginning of January, unlike Melons, may be shifted from the 3-inch pot to a 5-inch pot before planting them in the fruiting quarter, and one house if sufficiently long will suit both, if the Melons are placed at the warmer end, and are allowed to have plenty of sunshine. The portion of the border the Cucumbers are planted in should have 6 inches of drainage material on the bottom, sods (the grassy side downwards) being placed on this, and a small ridge of soil on the sods in which to plant. The soil for Cucumbers may consist of one half rough, turfy soil, and one half well-rotted manure well mixed together, this openness of material suiting the more copious waterings and syringings that the Cucumber plant needs.

Young Vines.—If young Vines are wanted either for pots or planting-out, now is the time to put in the eyes. There is no question that striking the eyes in turfy-loam is the best method. To do this, fill boxes measuring 24 inches by 18 inches by 3 inches with finely-chopped turfy-loam; put the Vine-eyes over the surface at 6 inches apart, and place in bottom-heat of 80°, the temperature of the house being 55° to 60°. When the eyes have grown 6 inches in length, cut out each "eye" in the centre of a square of 6 inches, when the young Vines will flag—but after two days the little squares may be potted if meant for pot Vines; and those meant for planting-out should be reboxed, say, two or three plants in the above-sized box, the soil used being fresh turfy-loam with some Vine-manure added. By the middle of May—the best time for planting—lift each Vine out as a solid sod, lay it on the surface of a new border where it will grow without feeling the removal, and the roots will keep near the surface. I had some Vine eyes inserted last February for planting in a newinery which was only finished towards the end of the month of June; at that time the young Vines were planted, and by the beginning of the

month of October, they had grown to a length of 25 feet, the house being a very high one. In preparing cut-backs or one-year-old Vines, steep them in a tank of water for forty-eight hours, then shake away all of the soil from the roots, half fill some boxes of the size given above with turfy-loam mixed with Vine-manure, spread the roots out carefully, one Vine in a box; cover with 1½ in. of the same kind of soil. This done early in February, they will lift out as a flat, solid sod in the middle of the month of May, and grow away without check. A crop of Grapes may be cut at the end of May, the Vines grubbed up, a small new border made, and Vines raised from eyes planted the same season, the rods going to the top of the house by October.

PLANTS UNDER GLASS.

By J. C. TALLACK, Gardener to E. MILLER MUNDY, Esq.,
Shipley Hall, Derby.

Yellow-spathed Richardias.—Of these *C. Elliotiana* seems to be the most popular, but as the cultural treatment of *C. Pentlandi* and *C. aurata* is identical, they are all included within the scope of these remarks. They differ in their needs from *R. africana* in that they require much more heat when growing, and a longer and more complete resting period, for unless the tubers are well baked in sunshine, no spathes need be expected. In order to have spathes during the latter half of April and throughout the month of May, which seems to be their natural flowering season, the tubers should now be potted, using rather large pots, as they make a considerable quantity of roots. The soil used should consist of equal parts of loam, leaf mould, silver sand, and a small quantity of dried cow-manure; the sand not being stinted, it appearing to be essential to good growth. They should be started in a light position in a house having a minimum temperature of about 60°. At the beginning no water, excepting what falls from the syringe, should be afforded, but when they are rooting strongly copious supplies are required until the growth of the plant is complete. Seeds of these plants sown at this season in heat germinate freely; the seeds should be sown far enough apart to allow of them growing for one season without removal from the seed-pots.

Ferns.—Many plants will be the better for being split up and repotted in new soil, others may perhaps go through another year with a top-dressing and a re-arrangement of the drainage materials. It should be borne in mind that all Ferns with rhizomatous stems do not like deep potting, or even deep pots. Most Ferns succeed in peaty soil, but soils containing a large proportion of pasture-loam suit *Adiantums* grown chiefly for cutting purposes. Take great care, when potting, of the young fronds now showing, as future success depends greatly on careful treatment at this date.

Alocasias, Marantas, and some other Store Foliage Plants should be examined, top-dressed, or repotted, while the sun's warmth is feeble, Marantas especially suffering from root disturbance. A very good mixture for most of these plants consists of peat, leaf mould, sand, and a small quantity of turfy loam. *Dieffenbachias* may be beheaded, the tops struck, and their stems cut up and treated like those of *Dracaenas*, if increase be desired. Young plants are, as a rule, more useful than old ones.

Bourvardias.—Plants that are passing out of flower should receive less water preparatory to pruning them later on for the production of shoots fit for propagating purposes. For my part, I like root-cuttings the best, but young stock may be raised by either method.

Plant-cleansing.—When opportunity offers, plants of all kinds infested by insect pests, not destroyed by fumigation or vaporisation, should be cleansed with a sponge and an insecticide. Mealy-bug and various scale insects are especially troublesome in warm plant-houses, and should be destroyed at this season, when breeding is at its lowest point.

THE KITCHEN GARDEN.

By T. TURTON, Gr. to J. K. D. WINGFIELD DIGBY, Esq.,
Sherborne Castle, Dorset.

Early Carrots.—Sow in drills in hot-bed frames the French Forcing, and for succession Sutton's Early Gem, the former at 8 inches apart, and the latter at 9 inches. Where a separate frame cannot be set apart for growing early Radishes, seed may be sown between the rows of Carrots, the latter being then sown in drills drawn 11 inches or 12 inches apart. Radishes germinate so quickly, and require to be so freely ventilated, that it is inadvisable to sow them together when the Carrots are required early. Avoid sowing either of them thickly.

Turnips.—Sow in a frame placed on a mild hot-bed seeds of the Early White Milan and Sutton's White Gem Turnips, in drills drawn at 1 ft. apart, and intercrop with Wood's Early Frame and French Breakfast Radishes, sowing thinly both Turnip and Radish seeds; and place Lettuce-leaves on the bed, in order to form baits for slugs, examining the leaves night and morning. A stack of good soil should always be available for frame purposes; and that in which Chrysanthemums, pot Strawberries, Melons, &c., have been grown, if it has been in stack for a time, will be found in every respect a very suitable one.

Spinach.—When the soil is in a condition to get upon, make a good sowing of a round-seeded variety, the Victoria by preference, and place the bed, if possible, on a south border. Autumn-sown Spinach in old kitchen gardens is apt to get gappy as time goes on, therefore the advisability of making a sowing at about this date. The seed-drills should be drawn at 18 inches apart; or they may find a place between the lines of early Peas. Spinach succeeds in freshly broken up land, as, for example, in fields that have been long under the plough, and is then heavily manured, and dug 1 to 2 spits deep.

Seakale.—Finish lifting the roots that are to be forced in warm, dark places. The best plan to adopt for getting a supply of Seakale late in the season is to grow some part of the crop in permanent beds, two rows in a bed, or in rows of small groups of three or four plants each. Where such beds exist, Seakale pots with movable covers should be placed over the clumps, and then a wall of strawy stable-litter should be built round the bed, and the centre filled up and well over the pots with last year's tree-leaves, trampling them firmly between the pots, and applying a covering of litter, so as to keep the leaves from being blown about. Seakale grown in this manner is superior to that produced by lifted roots, and its production entails very little labour, provided the beds are so placed as to be come-at-able with the garden cart.

Pea-sticks.—Procure the supply of these forthwith, and when received, lay them flat on a level piece of ground, and after forming them into a stack, lay some heavy pieces of timber on the top of the stack, till they can be trimmed and the butt ends sharpened. Treated in this fashion when green makes them flat, facilitates the work of sticking the rows, and makes more sightly rows. For early Peas I use the previous year's sticks, which should now be re-sharpened, and formed into bundles of a size convenient for a man to carry.

THE ORCHID HOUSES.

By W. P. BOUND, Gardener to J. COLMAN, Esq., Gatton
Park, Reigate.

General Remarks.—The various shadings and blinds belonging to the various Orchid-houses should be repaired and got in readiness for use. I favour the use of lath blinds, for apart from the fact that they are best for the plants in the summer, they are useful to lower over the roof on cold nights in winter, so as to minimise the use of fireheat, and if kept well painted they will last for many years. Blinds made of split Bamboos answer the same purpose, but for a gentleman's establishment, where the houses are in a prominent position,

they are not so neat as laths. Obtain a sufficient quantity of peat, sphagnum-moss, and leaf-soil, so there may be no delay in repotting the plants. All bottom ventilators in Orchid-houses should have a piece of perforated zinc fastened on the inside to keep slugs and other vermin out of the houses.

Cymbidiums.—Plants of *C. Traceyanum* and *C. giganteum* that flowered in the late autumn or early winter will now be making growth, and if any of them require to be repotted or divided, this is the proper season for these operations. Large specimens of *Cymbidiums* are very attractive, and I advise everyone who has sufficient house-room to cultivate a few of them. In order to maintain the plants in great vigour it becomes necessary to divide them after they have attained to the desired dimensions, and grow on the smaller pieces, so as to take their places as specimens. After a plant has filled as large a pot as it is possible to afford it, and the compost is exhausted, the deterioration of the plant will begin, unless it be divided and given a fresh start. A suitable compost consists of good turfy loam two-thirds, and leaf-soil one-third, together with a sprinkling of small crocks, the whole being well mixed together. A few large clean crocks will suffice for drainage, and over these some lumps of turfy loam should be placed. Pot rather firmly, and keep the base of the plant a little below the rim of the pot. After potting apply water very carefully till the plants have taken a good hold of the new compost: syringe freely between the pots and under the leaves, but overhead only on bright days.

C. Lowianum, *C. eburneum*, and the charming hybrids *Lowio-eburneum*, and the reverse cross, are now developing their flowers, and the plants will take water freely and without injury if the pots are well filled with roots. *Cymbidiums* do not require so much heat as is generally applied, and when grown cool the flowers and foliage are much finer than when the opposite course is followed, and there is little trouble in keeping them clear of insect pests. The same temperature as that advised for the *Odontoglossum*-house is quite high enough, plenty of fresh air being afforded.

Imported Orchids.—Much of the success in the establishing of imported Orchids is due to the sort of treatment afforded immediately on being received from the importers. Before being allowed to go into the houses thoroughly cleanse them of dirt and insects, then lay them on a stage in a somewhat cool, moist house till the potting can be attended to. Many of the leaves may be retained if they are placed in a cool-house and kept well shaded till they show signs of growing. An imported plant requires time to recover, and cool treatment affords that time; growth also is stronger and cleaner when it does start.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bictou, East Budleigh, Devonshire.

Grass Orchards.—The established and older trees should receive an annual top-dressing at this season, and for this purpose road-scrappings mixed with farmyard manure form a good compost, and if not plentiful enough to spread over the entire orchard, it should be placed around each tree for a space of 6 feet in diameter. Many Devonshire farmers turn sheep or pigs into their orchards as soon as the fruit has been cleared from them, towards the end of November, and gratifying results are achieved thereby, the fruit swelling up to a much larger size than heretofore, especially where pigs were turned in. When these animals are taken out of an orchard, not a blade of grass can be seen, but as soon as the warm days come, it soon begins to grow again. These animals do not touch the trees, but they root up and devour all roots of nettles that come in their way; still, it is safer to put wire netting, branches of Holly or Furze around the stems of young trees in order to prevent the pigs rubbing themselves against them. Sheep have been known to

bark the trees badly when the latter are left unprotected. All newly-planted trees should be firmly staked and tied before animals are turned into an orchard. Liquid-manure, generally obtainable where there are large gardens, may be applied with advantage at this season to established trees only.

The Mulberry.—Outside of a nursery the Mulberry is seldom seen as a young tree, a matter for regret, seeing that the fruit is so generally liked in tarts, and as jelly. The Mulberry is generally found growing best in moist situations, though I have seen trees of great age in this county on a dry bank flourishing and fruiting abundantly in most years. The standard is the usual form of tree, and it should be planted on turf, so that the ripe fruit may fall thereon, and be fit for use. The wood of the Mulberry being very brittle, the tree should not be planted in exposed situations. In the less warm parts of the country, the Mulberry requires a warm wall to bring it to perfection.

The Quince and Medlar.—A few Quince and Medlar-trees should be found in every garden, for while the fruit of the former cannot be eaten in the raw state, it makes a delicious marmalade and an addition to Apples in tarts. It is best grown as a bush or a pyramid. The pruning is much the same as that afforded the Apple, removing all useless sprays each winter, affording a rather moist loamy soil, and full exposure to the sun. The varieties with Apple and Pear-shaped fruits are those mostly cultivated, and the flowers are very beautiful, so that the Quince is a capital plant for the shrubbery, or isolated on the lawn. The Medlar makes an excellent jelly when blotted, and many persons like them in the raw state. The tree requires but little pruning when once it begins to fruit, though any shoots that are inclined to cross each other, or run away unduly, should be removed betimes or cut back. It is generally grown as a standard, but forms a picturesque bush. Old trees should be assisted with manure in some form, or the fruit will be small. The Royal and the Nottingham are good varieties to plant. Trees may still be planted in open weather.

THE FLOWER GARDEN.

By R. DAVIDSON, Gardener to EARL CADOGAN, Culford Hall, Bury St. Edmunds.

Propagation.—Shoots fit for making cuttings of *Iresines*, *Alternantheras*, *Heliotropes*, *Abutilons*, &c., should now be taken off, and, after proper preparation, inserted in pots or pans filled with a mixture of finely sifted leaf-mould one-half, loam one-quarter, silver-sand one-quarter, with a $\frac{1}{2}$ -inch layer of sand on the surface; afford water sufficient in quantity to settle the sand about them, but no more, and plunge in bottom-heat of about 75° in a propagating-house or frame, and keep close and shaded from sunshine for about ten days, and then gradually inure to light and air. If possible, let the requisite number of each variety be struck at one time, in order that batches of equal-sized plants are obtained. If certain varieties of bedding *Pelargoniums* are scarce, cuttings may be obtained in quantity from plants which have been stored in pots or boxes, potting them singly in 60's in a light compost, placing them on the border in a Peach-house orinery that has been started, where they will strike readily and become useful plants. If *Lobelias* are required in large numbers, sow seeds of a good strain at this season, and again in a fortnight, using shallow pans, and affording tepid water to the soil before sowing the seed. When the surface of the soil becomes dry, place a square of glass over each pan, and shade with some light materials until the seeds germinate. Care must be taken not to apply water overhead before such time as the seedlings are well rooted into the soil; slightly immerse the seed-pans in tepid water, so that the water enters from below.

Toy-leaved Pelargoniums.—These plants are very desirable for outdoor gardening, either

as trailers, or specimens for covering trellises. Such of the plants as are intended for forming into specimens, which have wintered in 7-inch pots, may now be potted in 9 or 10-inch ones, making use of a compost consisting of turfy-loam, spent Mushroom-dung, and some road scrapings. Cuttings of these plants standing in boxes having commenced to grow should be potted off to the number of two in a 60-pot, in a less rich material.

Flowering Shrubs.—The pruning, tying, and nailing of climbing plants on walls with a warm aspect should now have attention. The system of spurring the laterals will suit all the summer-flowering varieties of *Lonicera*, such shoots only being retained of full length as may be required for extension. Species of *Clematis* will require little beyond removing the dead shoots. The shoots of some species die to the ground annually; but hybrids of the Jackman type, where the plants are robust, should have the weakest shoots thinned out, or the plants will soon exceed the available space. *C. Jackmani* and its hybrids may be cut down to the ground annually, as it flowers on the current season's growth, or the shoots may be simply shortened; *C. montana* (spring), *C. patens* (spring), *C. florida* (summer), flower on the one-year-old wood; *C. graveolens* (late summer), *C. lanuginosa* (successional), and *C. viticella* (successional), flower on the young growing summer shoots. Avoid the overcrowding of the shoots of *Jasminum officinale* by removing the superfluous growths. *Buddleia globosa*, *Choisya ternata*, *Thermopsis laburnifolia*, *Passiflora cœrulea*, and *P. Constance Elliott*, grow and flower best by allowing free extension, only unripened parts of shoots being removed. There are many kinds of *Roses* that may be closely spurred so far as regards the growth of the previous year, but reserving well ripened shoots that spring from the base of the plants; these being laid in, filling the place of exhausted shoots and branches. The flowers of *Maréchal Niel* and climbing *Niphetos* are borne on young, well ripened lateral shoots. Cut back old bare branches where practicable, and thus make room for strong vigorous growth that will produce flowers the coming summer.

RESOURCES OF THE STRAITS SETTLEMENTS.—According to a recent number of *Nature*, Mr. H. N. RIDLEY, Director of the Botanic Gardens, Singapore, delivered a lecture at the Imperial Institute recently, entitled "The Economic Resources of the Straits Settlements and the Malay Peninsula." He remarked that the forests, which originally covered the whole peninsula, contain many valuable products, such as timbers, wood-oil, benzoin, gutta-percha, and rattans. Owing to the felling of trees by the Malays, gutta-percha, so indispensable for electric work, has been nearly exterminated. Fortunately, however, the product can now be extracted from the leaves and twigs without injury to the trees, which are being planted by the Government. A very large area of the Federated States is under Coffee, but on account of the present glut of the market, and the consequent low prices, most of the planters are adding Para-rubber to their estates—a tree which thrives marvellously well, and produces a very satisfactory amount of rubber of the first quality. India-rubber from the *Ficus elastica* also promises well; but although it is being planted, its product is less highly valued. Accounts were given of the cultivation and preparation of Sago (Laere of the Sago-Palm gives as much nourishment as 163 acres of Wheat), *Tapioea*, *Gambia*, *Mangrove-Cutah*, *Pepper*, *Nutmegs*, *Cloves*, *Indigo*, and *Pineapples*. The greater part of the preserved Pines of commerce come from Singapore, where the price of the fruit varies from a farthing to a penny each; and the lecturer remembered a time when they had been as cheap as sixteen a penny! The mineral resources of the colony include gold and tin, the latter being found in great abundance."

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 to return the unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and 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.

SALES FOR THE WEEK.

MONDAY, FEB. 3.—Plants, Lilies, &c., by Protheroe & Morris, at 12.
WEDNESDAY, FEB. 5.—Palms and Decorative Plants, Fruit Trees, &c., at Stevens' Rooms, 12.30.—Azaleas, Palms, &c., by Protheroe & Morris, at 12.
FRIDAY, FEB. 7.—Roses, Ferns, &c., at 12; Orchids, by Protheroe & Morris, at 12.30.
(For further particulars see Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick —39° 3'.

ACTUAL TEMPERATURES:—

LONDON.—January 29 (6 P.M.): Max. 39°; Min. 31°.

January 30.—Fine; slight frost.

PROVINCES.—January 29 (6 P.M.): Max. 42°, S.W. Ireland; Min. 27°, N.E. Scotland.

We are challenged by Mr. WARD to give chapter and verse for our statement in a recent number, that there is no "special" virtue in the use of nitrogenous manures for Peas. Perhaps, if we had used the word proportionate, our meaning would have been clearer. We did not intend to convey the impression that Peas were not at all benefited by manure of this kind—daily experience in the season would prove the contrary. But the benefit is not directly proportionate to the quantity of manure used. We based our statements on the well-known Rothamsted experiments, in particular on some which we had the opportunity of watching and noting for ourselves for some years in succession.

On a plot manured with dung, the total Leguminosæ actually diminished in comparison with what happened on the unmanured plot. Leguminous plants under the influence of dung and ammonia-salts were almost banished, and corresponding results were observable on each one of the many plots to which nitrogenous manure of any kind was applied. It must be remembered that these were not a few experiments on a small scale over a short term of years, but, on the contrary, they were very numerous, on a large scale, and extended over half a century, the records being kept with that minute accuracy which characterised all the Rothamsted experiments.* A summary statement of the facts is given

in Dr. MASTERS' *Plant Life*, p. 100, in the chapter on "The Battle of Life."

Leguminous plants are known to be in a degree independent of nitrogenous manure by virtue of the little nodules which are met with on their roots. These nodules result from the irritation and swelling caused by minute bacteria. But the irritation and swelling are not all detrimental to the plant. The bacteria they contain have the power, in some way or another, of collecting and furnishing to the plant the nitrogen it requires, possibly by converting insoluble compounds of nitrogen in the soil into those which can be assimilated. In any case, the apparent parasite confers a benefit on its host, and a state of what botanists call "symbiosis" is maintained, to the advantage of both. Percival's *Agricultural Botany* (1900) has an instructive chapter on this subject.

The whole subject is indeed complex and ill-understood, but enough is known to show that, provided a soil be fairly rich, no large amount of farmyard manure or of nitrogenous manures generally, is necessary in the culture of Peas and Beans. In this respect they are the antithesis of cereal plants.

One of the best artificial manures for leguminous plants, Peas and Beans, is muriate of potash afforded as top-dressings at tri-weekly intervals, and if possible in moist weather hoeing it into the ground. This should be applied just before the plants come into flower, and again during the bearing season. In the event of rain not falling, water must be applied on each side of the row for a space of 18 inches, the distance to which the dressing should extend. As manures furnishing potash and phosphates, there are the Norwegian fish-manures, especially that of cod and potash, the phosphates equalling 20 per cent., and potash 15 per cent., and the quantity advisable to use being from 2 to 4 cwt. per acre. As a means of treating the land in accordance with the needs of the Pea-crop, the intercropping method is the more suitable, the position of the rows of Peas being indicated by stakes, the breadth for single rows being 4 feet, and double rows 7 to 8 feet, according to the height of haulm. These strips could be left undug, and be trenched 2 to 3 spits deep; and the intermediate breadths should be manured in a manner suited to the various crops they are intended to carry, and dug or trenched as may seem desirable.

LINNEAN SOCIETY.—On the occasion of the evening meeting to be held on Thursday, February 6, 1902, at 8 P.M., the following papers will be read:—1. "On a Method of Investigating the Gravitational Sensitiveness of the Root-tip," by F. DARWIN, F.R.S., F.L.S.; 2. "An Extinct Family of Ferns," by Dr. D. H. SCOTT, F.R.S., F.L.S.

MY GARDEN DIARY.—MESSRS. SUTTON & SONS, of Reading, have again this year sent out an Almanac in a pretty cover, and containing useful cultural notes, and blank spaces for memoranda. The following appropriate quotations are appended to the booklet:—"Doing things in good time is the main secret of successful gardening," *The Garden that I Love*, by ALFRED AUSTIN. "I do hold it, in the royal ordering of gardens, there ought to be gardens for all the months in the year; in which, severally, things of beauty may be then in season," Lord BACON.

PRESENTATION TO MR. JOHN WRIGHT.—At the annual meeting of the Worshipful Company of Fruiterers, held on Friday, January 24, Mr. JOHN WRIGHT, V.M.H., was presented with the handsome Gold Medal of the Company upon the publication of the sixth edition of *Profitable Fruit Growing*. Mr. WRIGHT, who was for twenty-five years (ending at the close of 1900) on the staff of the *Journal of Horticulture*, thus becomes a triple Gold Medallist for distinguished services in horticulture.

MONMOUTH TECHNICAL INSTRUCTION COMMITTEE.—We have received the Report of the Organising Secretary to the Technical Instruction Committee (County of Monmouth) as regards agriculture, dairy and cheese schools, horticulture and arboriculture. Horticultural instruction has proved acceptable and profitable, and cider-making has also received attention, and the cider showed a marked improvement upon that made last year.

"AGENDA HORTICOLE."—Par L. HENRY (Paris: Librairie and Imprimerie Horticole, 84 bis, Rue de Grenelle). A useful handbook, including a calendar and much useful information, not merely about agricultural and horticultural arrangements for the current year and notes, but also weights and measures, postal information, money tables, and the usual accompaniments of an almanac, including a blank diary and pages for memoranda.

"INDEX KEWENSIS."—The first instalment of the Supplement to the *Index Kewensis*, prepared by M. DURAND, of the Brussels Botanic Garden, and Mr. B. DAYDON JACKSON, has just been issued. It comprises the names of plants published between 1886 and 1895 inclusive, and extends from "A" to "Cym." The first thing that strikes us is the overwhelming number of names for which Herr KUNTZE is responsible. To give one instance: under *Acinodendron* between seven and eight quarto columns of Kuntzean names are given for species which have been referred by all other authors to *Miconia*. Herr KUNTZE may be right or he may be wrong in his opinion, but by insisting on it, he is making systematic botany impossible. Nomenclature in itself is a means and not an end; pursued as an end it defeats its own object of facilitating study. The editors are probably technically correct in inserting all these names, but we should have been just as well pleased if they had been left in the author's *Revisio Generum Plantarum*, where they might have been found by those desirous of making the search. If these names had been the outcome of monographic research on the part of the author, they would, of course, have a clear right to be inserted in this Index. Ten years ago we discussed the matter in these columns, and need not more fully advert to it now unless it be to express our satisfaction that the names alluded to are treated as synonyms rather than as accepted names. The more frequent insertion in the Supplement of the date of publication is an improvement for which workers will be grateful. Even now, there are omissions in this particular, for while the dates are given in some genera, they are omitted in others. In some cases we find hybrids included, a circumstance which, in view of the activity of hybridists, we may well rejoice at. The spelling of the word *Alchimilla* is unfamiliar: LINNÆUS certainly wrote *Alchemilla*, but doubtless the editors had good reason, because, as we see in the *Philosophia Botanica*, TOURNEFORT wrote *Alchimilla*. If this is the reason, the change is of a rather Kuntzean character. A few misprints, wonderfully few,

* "Agricultural, Botanical, and Chemical Results of Experiments on the Mixed Herbage of Permanent Meadow, conducted for more than twenty years in succession on the same land." Part II. "The Botanical Results." By Sir J. B. LAWES, Bart., LL.D., &c.; J. H. GILBERT, Ph.D., F.R.S., &c.; and MAXWELL T. MASTERS, M.D., F.R.S. *Philosophical Transactions of the Royal Society*, vol. 173 (1883).

are apparent: "*lasciocarpa*" should be "*lasiocarpa*," and "*Im Thurn*" should be "*Im Thurn*;" *Aristolochia longe-caudata*, Mast., published in MARTIUS' *Flora Brasiliensis* in 1869, and figured in the *Gardeners' Chronicle*, November 1, 1890, is not mentioned either in the original text or in the Supplement, although SERENO WATSON's plant of the same name, but not published till 1887, is included. But these are very minor matters; the substantial fact is, that we have here the commencement of the record of all plant-names (except those of Cryptogams), published between 1886 (the date at which the original volumes cease) and 1895; and this is a boon for which all botanists and all those engaged in systematic research will hold the editors in grateful admiration.

A VICTORIA MEMORIAL TREE.—The KING has planted a tree at the Flemish Farm, Windsor Great Park, in memory of QUEEN VICTORIA. It is placed near that planted by the late QUEEN to the memory of the PRINCE CONSORT, to mark the spot where he fired his last shot when shooting in Windsor Park, where he caught a chill shortly before his death.

BOTANICAL BOOKS.—The books recently sold at STEVENS' Rooms in many cases sold at splendid prices: "Curtis's British Entomology" realised £19; a remarkably fine set of "Curtis's Botanical Magazine," £130; "Edwards' Botanical Register" realised £16; "Hooker's *Icones Plantarum*," £43 10s.; "Loddiges' Botanical Cabinet," £39; "Sowerby's English Botany," £15; "Parkinson's *Paradisi in Sole*, &c.," £20; "Andrews' Coloured Engravings of Heaths," £15 10s.; "Curtis's *Flora Londinensis*," £12 12s.; and "Blume's *Rumphia*" realised £13.

HOUBLON APPLE.—Messrs. HORNE & SONS, Cliffe, near Rochester, Kent, have purchased the entire stock of the new dessert Apple called Houblon from Mr. C. ROSS, Welford Park Gardens, Newbury, Berkshire. This is from the same cross as the famous Charles Ross Apple; in fact, it is from a pip out of the same fruit, but takes more of the character of one of its parents, Cox's Orange. It gained the 1st prize at the Palace Show, October 10 last. The same dish was shown at the Royal Horticultural meeting, December 17, when an Award of Merit was recommended for the novelty. The fruits were not larger than Cox's Orange Pippin, but were very highly coloured. The eye is open, and set in a moderate-sized basin; the quality of the flesh is good. The parent tree having a heavy crop of fruit last summer, made but little wood, so that the stock of trees the first year will be very limited.

THE MIDDLESEX COUNTY COUNCIL SCHOOL OF HORTICULTURE.—The Technical Education Committee of the Middlesex County Council having decided to establish a school of practical and scientific horticulture, has, by arrangement with the Edmonton District Council, acquired a large piece of land with six greenhouses at Pymmes Park, Edmonton, for the purpose of carrying out this idea. The main object in view is to give a thorough horticultural training to those who are anxious to take up gardening as a profession. Opportunity will also be afforded to school teachers to acquire a knowledge of horticulture by means of special Saturday morning lessons and demonstrations in the gardens. Only the best and most profitable kinds of fruits, flowers, and vegetables, will be grown; and trials and experiments of particular crops or varieties

will be carried out from time to time, as occasion may require. Scientific training will go hand in hand with the practical, and lectures and demonstrations on the theory and practice of horticulture, the examination and classification of plants, the use of the microscope, &c., will be freely given. Students will also have the privilege of attending the lectures on chemistry and other sciences at the Council's well appointed laboratories at the Tottenham Polytechnic. The County Council offers three scholarships of £20 to £30 per annum, according to the age of candidates. The work in the gardens will be carried out under the direction of the Council's Instructor in Horticulture, Mr. JOHN WEATHERS, F.R.H.S., author of *A Practical Guide to Garden Plants*. Prospectuses and further information relating to the School of Horticulture may be obtained from the Organising Secretary, The Guildhall, Westminster, S.W.

FLOWERS IN SEASON.—Some blooms of very excellent varieties of *Primula sinensis* were recently brought to our notice by Mr. W. BULL, the New Plant Establishment, King's Road, Chelsea, which brought out capitally the advances made in colour, form, and size, in this species. We remarked *marmorata*, *lilacea*, *Ruby Queen*, *Imperial Blue*, *Avalanche* (a fine dense white), and *Comet*, all single-flowered; *Blushing Beauty*, *Fulgens*, and *Prince Arthur*, among double-flowered varieties.

CHRYSANTHEMUMS.—Mr. H. CANNELL lately discoursed at Chislehurst on the history of the Chrysanthemum. Few persons are better able to speak with authority on this subject, as he has been an active participator in the work of improvement during the last 50 years. SALTER, whom Mr. CANNELL mentions, was not a Frenchman, but an Englishman who resided for some years at Versailles and afterwards returned to England, bringing with him many novelties among Chrysanthemums. He was also one of the first to take up the varieties imported by Fortune. Mr. CANNELL alludes to the value of the services of Mr. HARMAN PAYNE; and sketches the origin and progress of the Pompon, Japanese, hairy, early-flowering, and other varieties, and does not overlook the beauty of the single varieties.

TESTIMONIAL TO MR. RICHARD DEAN.—At a meeting of subscribers, held on January 14 at the Royal Aquarium, Westminster, it was resolved to entertain Mr. DEAN to dinner at the Aquarium on February 1, and to then present the testimonial. The testimonial will take the form of an address on vellum and a cheque. Application for dinner tickets should be made to Mr. H. J. JONES, Ryecroft, Lewisham, London.

"THE CULTURE OF VEGETABLES AND FLOWERS FROM SEEDS AND ROOTS."—By SUTTON & SONS, Reading. (London: SIMPKIN, MARSHALL, HAMILTON, KENT & Co., Ltd.) This is the tenth edition of a handbook valuable to any gardener, professional or amateur. It deals with a Year's Work in the Vegetable Garden, the Rotation of (Vegetable) Crops, the Chemistry of Crops, Culture of Flowers from Seeds and from Bulbs, Flowers all the Year Round, Lawns from Seeds, and Fungous and Insect Pests. The book is the work of experienced hands, and the present edition appears to be improved and enlarged. The index is a useful addition.

"BOTANIKER ADRESSBUCH."—This is a list of the names and addresses of living botanists in all countries. It is carefully executed, and indispensable to botanists and those who have to do with them. The latest change in

the Brussels Botanic Garden is not noted, probably because the book was already in type. It may be had from Herr DÖRFLER, Barichgasse 36, Vienna, III.

SNOWDROPS.—In a garden at Ealing exposed to the north, the first Snowdrop was picked on January 21, which is about the average date. The earliest date in the same garden was January 9, 1890, the latest date February 6, 1891.

FRUITS AND VEGETABLES FROM FRANCE.—It is interesting, for several reasons, to learn that the trade in Strawberries and vegetables between Brest and Plymouth is an increasing one, and very profitable to our friends across the Channel. In 1900 the sales here of French produce amounted to £50,000; last year they reached some £60,000; and it is believed that this year there will be a still further increase. In view of this, several steamers are being taken up here on six-week contracts to carry fruit and vegetables from Brest, &c., to Plymouth, on every day of the week excepting Saturday and Sunday.

THE NATIONAL CHRYSANTHEMUM SOCIETY'S annual general meeting, which has been already announced for Monday next, Feb. 3, will be held at Carr's Restaurant, 265, Strand, W.C., at 7 P.M., when Sir A. K. ROLLIT, M.P., the new President, is expected to take the Chair. In addition to the usual business, such as the presentation of the Committee's report and balance-sheet, election of Officers, &c., notices have been given of proposed amendments to Rules III. and XIV. A subscription-list has been opened for the purpose of establishing a memorial to the late President by the offering for competition each year of a large Gold Medal of the Society, such medal to be known as "The Sir Edwin Saunders Memorial Gold Medal."

"IN A MINSTER GARDEN."—A causerie by the Dean of ELY. (London: ELLIOT STOCK, 62, Paternoster Row, E.C.) The pictures first draw our attention, as they are from photographs of charming "bits" of Ely architecture. As to the garden, that is the setting for a love-story with a heroine endowed with beauty, book-learning, musical genius, and just a few other possessions. Dr. STUBBS is evidently enthusiastic about the history of Ely and the "Minster," and is most at home when writing of BRYHTNOTH the Ealdorman, JOHN of Crauden, and other local heroes, who are still far more interesting than the puppet-like characters that are supposed to be types of modern life. But we are not disposed to be severe on any part of a book "written," says the Dean, "to amuse myself during the enforced leisure of convalescence;" and avowedly "O et olla." This motto is a quotation from a list of expenditures of the thirteenth and fourteenth centuries: the "O" indicating one or other of the great pre-Christmas antiphons which began *O sapientia!* *O Adonai!* and so on. "The olla, or pot, was the homely synonym for the subsequent rejoicing at the refectory feast . . . under the titulus 'O et olla,' therefore, was evidently combined the thought of things both solemn and joyous, grave and gay, of prayer and worship in church, of comradely work and happy leisure in cloister and frater house." Besides the subjects already indicated, we read of the Prior's holiday in the New World, where his experiences were favourable but, probably, not unique, and so are given to us in a single chapter, and not spun out to form a whole book. This "Minster Garden" should be welcomed by transatlantic readers, for it

bears about it the atmosphere as it were of antiquity, half traditional, half historical, that makes our cathedral cities so charming. The book would make a welcome gift to anyone interested in Ely, as it is full of local "colour," yet quite unlike an ordinary guide-book.

RUMPHIUS.—The directors of the Colonial Museum at Haarlem intend to celebrate, on June 15, 1902, the bicentenary of the death of GEORG EBERHARD RUMPHIUS. This naturalist, who was born in 1627, died on the Island of Amboyna, after forty years of unremitting labour there. A medal is to be issued to commemorate the life and work of this distinguished scientific man in the Moluccas. The medal shows, on one side, the portrait of RUMPHIUS, and on the other, a view in Amboyna. The execution of the design has been entrusted to the firm of C. Y. BEGER, of Utrecht. Purchasers of the medal will be presented with a copy of the Rumphius Memorial Book, which will be published on June 15, 1902, at the Colonial Museum. Contributions may be sent to Herr W. P. GROENEVELDT, or to Herr M. GRESHOFF, director and secretary respectively of the Colonial Museum, Haarlem. The medal, which is about 2 inches across, costs about two guineas in silver, and eight shillings and sixpence in bronze.

"LINDENIA."—The December number of this important publication contains coloured illustrations and descriptions of the following Orchids:—

Vanda teres var. *candida*, tab. declvii.—A variety originally described by Reichenbach in our columns in 1875. The segments are white, the anterior lobe of the lip streaked with lilac, and the base marked with yellow.

Odontoglossum crispum La Veine, t. declviii.—A truly superb variety, with flat flowers, broad, ovate-acute, undulate segments, white, with a large central rosy-purple blotch. The lip is of similar form, with a large central purplish blotch, surrounded by a narrow white edge, and with a yellow disc. The name "la Veine" has reference to the fine "vein" of *Odontoglossums* which the collectors for the Moortebeke establishment have been so lucky as to exploit.

Catanthe : *Mylesii*, t. declix.—Probably a hybrid between *C. vestita* and *C. Veitchii*. The hybrid has the flowers entirely white. A list of the more important hybrids is given.

Cymbidium ligurium, t. declx.: *Bot. Mag.*, t. 5457. One of Mr. Parish's discoveries in the mountains of Tenuasserim. Flower segments greenish-yellow spotted with red, the lip white streaked with purple, its lateral lobes yellow streaked with reddish-brown. The terminal flowers are sometimes wholly red, and the column imperfectly developed, peculiarities which are not constant, as they are not shown in the plate.

ROYAL APPOINTMENT.—Messrs. THOMAS GREEN & SON, Limited, inform us that they received a warrant appointing them purveyors of mowing-machines to the KING in August last, and they were therefore among the first to receive His Majesty's commands. The firm held a similar appointment from her late Majesty Queen VICTORIA.

PUBLICATIONS RECEIVED.—*The Ninth Report of the New Zealand Department of Agriculture, 1901.* Contents: Sir John McKenzie, K.C.M.G. (obituary notice); Report of Secretary for Agriculture, Dairying, Stock, Poultry, Veterinary Science, New Zealand Hemp, Biology, Horticulture, &c.—*Annual Report of the Queensland Department of Agriculture for 1900-01.* "The greatest agricultural industry here at present is the sugar industry. About one-fifth of all our cultivated land is under Sugar-cane, and about three-fourths of the value of our agricultural exports must be credited to sugar. It is therefore not pleasant to have to record the heavy loss this great industry suffered, chiefly from drought, last year." Much more encouraging are last year's figures relating to Wheat, Maize and fruit-growing also were successful.

SANTA BARBARA.

[SEE SUPPLEMENTARY ILLUSTRATION.]

OUR illustration, furnished by Dr. Franceschi, shows the effect of an Agave when permitted to flower in the open air. The plant is named *A. recurvata*, a name not in Mr. Baker's list, but which may be a form of the common *A. americana*, the so-called century plant, though every gardener is aware of the inaccuracy of the popular notion that a century is required to ensure the production of flower. A considerable time may indeed lapse before the conditions are favourable. When once the plant has flowered it dies, but not before it has provided for its perpetuation by the production of offsets.

Santa Barbara, says Dr. Franceschi, is known all over the world as the place where the largest number of plants from widely different climates have congregated to live happily together, and will often thrive with more vigour than in their native countries. Mainly two factors have contributed to bring these results. The first is Nature, namely, the special topographic and climatic conditions of this spot. The local meteorological records for over 30 years, when carefully compared with other localities of Southern California, unquestionably show that Santa Barbara enjoys the privilege of higher rainfall, and of less variation between the different seasons of the year, consequently the growth of most plants is continuous, and they will attain here larger size and come into bearing much earlier than in other places. The other factor is man, who in this case has wonderfully co-operated with Nature. Ever since the first establishment of the Old Mission, more than a century ago, a much larger number of plants was introduced here from foreign countries than in other localities of California, and a smaller number of them have been lost, because they found here more congenial conditions. At the beginning of the new century, it is safe to say that there are grown in the open at Santa Barbara not fewer than 150 different species of Palms, about the same number of Conifers, 50 species of Bamboos, about 300 Vines or climbers, and something like 2,000 different species trees, shrubs, and perennials. They have been introduced here from the hottest and from the coldest regions of the globe, as well as from the temperate ones, and they combine to make a display of vegetation that have no rivals anywhere else.

As for Roses and the more familiar garden flowers, their profusion at all seasons of the year is fairly bewildering. Even more interesting to the botanist, or indeed to most genuine flower-lovers, are the native wild flowers which, in their season, carpet field and hill-side.

THE SALE OF POISONS FOR INDUSTRIAL PURPOSES.

WILL you kindly allow me to bring under the notice of your numerous readers the action that is being taken by and on behalf of a number of important traders who are interested in the sale of poisons for other than medicinal purposes? Agricultural agents, farmers, agriculturists, fruit-growers, seedsmen, ironmongers, drysalters, and many others are concerned, and to some of these the subject of this letter may not be unfamiliar, while to others, who have not had their attention directed specially to it, it may be both new and interesting, as well as important.

To put it briefly, the question at issue is, the right, and the desirability, of poisonous compounds required for trading and industrial purposes, being sold by other than dispensing chemists and druggists. The latter possess, under the Act of 1868, the monopoly of all such sales, and occasionally the Pharmaceutical Society, acting in their behalf, institutes prosecutions for the recovery of penalties, with the object of assert-

ing this monopoly; but as a matter of common practice, the law is not generally regarded as having the effect that the Pharmaceutical Society contends for, and many retail dealers habitually disregard its alleged intention—of course, at the risk of being proceeded against. It is for the purpose of relieving traders of this liability, and thereby meeting the convenience of the public at large, that an organisation entitled "The Traders in Poisons or Poisonous Compounds for Technical or Trade Purposes Protection Society" has been formed; and the action that this Society is now taking, in the interests of all such traders throughout the country (and not merely its members), is what I am anxious to disclose to your readers.

The Society to which I have the honour to be Secretary was formed in March, 1900, since which date it has been very successful in organising the various traders who are directly concerned in the sale of poisonous compounds for industrial purposes; upon the eve of the last General Election it communicated with most of the parliamentary candidates, and 90 per cent. of the replies received were favourable to the Society's objects. Briefly put, the object is to secure an amendment of the existing law. Those traders who are continuing the sale of the various articles in which they have been accustomed to deal will be gratified to learn that effectual and energetic steps are being taken to vindicate their position, and secure their immunity from prosecutions. This is largely due to the great and sustained interest taken in the Protection Society by its Treasurer (Mr. G. H. Richards), whose strenuous exertions have done much to inspire confidence in the classes of traders who are directly concerned in this subject, and who may confidently rely upon a continuance of energetic action in their behalf until the object is attained. There are many reasons why the Pharmacy Act of 1868, already alluded to, should be amended. In the first place, it is evident, from the preamble, that it was intended more particularly to ensure the safety of the public, by insisting that only competent persons, having practical knowledge of the properties of poisons, should have the dispensing of same. That is reasonable enough; but in the days when the measure became law there were not in existence the multitudinous packages and bottles of preparations, compounded by the manufacturer ready for immediate use, for horticultural, agricultural, and other trade purposes, which are now to be met with all over the country. As regards these, the ordinary chemist and druggist has no more practical knowledge than the man in the wood. The manufacturer tells him—and the public at large—by advertisement, that this or that mixture, or sheep dip, or powder, is an excellent remedy for this or that disorder, and the purchaser, like the chemist, takes it on trust for some specific purpose, the chemist being merely the channel through which the manufacturer reaches the customer. There is no skilled practical knowledge of poisons required to dispose of a sealed packet or vessel which the chemist receives from the manufacturer, who alone undertakes the responsibility of declaring that a compound of poisonous articles, of a certain strength, is effective for a certain purpose. The purchaser might just as well buy what he wants from any other tradesman so far as the skilled knowledge of the chemist is brought to bear upon the article disposed of. Indeed, in most cases it would be distinctly advantageous to the buyer if he went to some person who had practical experience of the preparation required. Take, for instance, the case of an insecticide (such as XL All) containing poison. Would not a seedsman or horticultural agent be more likely to give valuable advice to a purchaser based upon practical experience, than a chemist whose principal employment is the dispensing of drugs intended to cure all the ills that flesh is heir to? The one has probably used the poison himself, and is in a position to say how best to apply it; but the chemist would, from his different occupation, have had no opportunity of acquiring such knowledge.

The same argument applies to sheep dips, weed-killers, &c. If there is any risk to public safety involved in the proposed freer sale, it is not increased by disposal through a seedsman, nor minimised by being handed over a chemist's counter. Again, how few pharmacists have any but the most remote knowledge of the best means of destroying aphids, mealy bug, or mildew—so destructive to the fruit-grower—compared with the seedsman or agricultural agent? The new vaporisers and insecticides which have come into such general use in recent years have been invented by members of the horticultural trade, and people who are accustomed to their application are naturally the best advisers of purchasers—not chemists, who know nothing of them beyond the label on each packet. Indeed, the skilled knowledge of the pharmacist, which may be of the utmost service in making up a bottle of medicine for a human being, is not brought into use in the sale of a sealed packet or vessel; hence the very reasonable demand that the sale of poisonous compounds for purposes already indicated shall not be confined to chemists and druggists, but be legally extended to other tradesmen, who can then meet the convenience of the public without incurring risk of

prosecution. A measure such as is contemplated would also enable photographic requisites containing poison to be sold by others than chemists.

It is to the benefit of traders in all parts of the country that the Society to which I have referred is exerting itself, and I am glad to inform you that the reasonableness of its demand has been admitted by the Privy Council, who last year appointed a Poisons Committee to investigate the matter and report on the evidence submitted to them. Already that Committee has held three sittings, at which witnesses were heard on behalf of the Pharmaceutical Society on the one hand, and our Protection Society on the other, besides

seedsmen, oil and colourmen, ironmongers, hardware dealers, and the like, who would benefit by an amendment of the law which enabled them to sell, without fear of prosecution, many articles in great demand, in town and country alike. I therefore hope that this Trade Protection Society will receive their cordial support. It already has the sympathy, in a practical form, of the Ironmongers, the Tar Distillers, and the Photographic Societies, and it is hoped that the success which has attended its efforts so far in its attack upon the monopoly, will attract the continued and extended interest of all those who wish to see that monopoly broken down.

A VISIT TO THE NORTH.—XI.

(Concluded from p. 55.)

DALKEITH PALACE.

On the last of the very few days spent in Edinburgh, I determined to go to Dalkeith, and get a glimpse of those gardens that, together with the name of their late director, Malcolm Dunn, are known, by repute at least, to all readers of the *Gardeners' Chronicle*. Time was very short, for when I had travelled

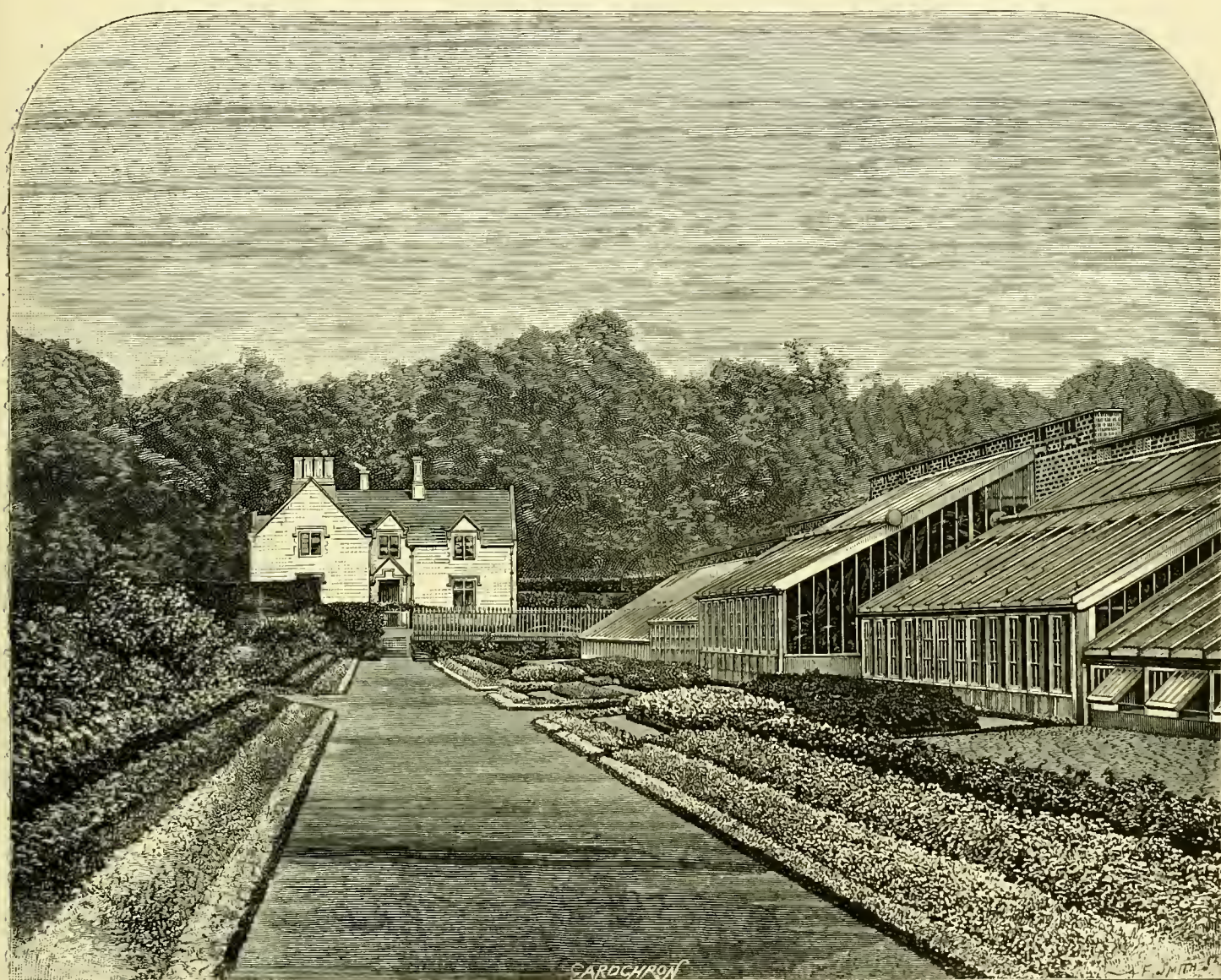


FIG. 29.—VIEW OF THE GARDENER'S HOUSE AT DALKEITH, AND SHOWING SITE OF THE RIBBON BORDERS, REFERRED TO ON P. 82.

some independent skilled and Departmental witnesses; and there is good reason for believing that the Committee may recommend the adoption of a third schedule to the Pharmacy Act, which will provide, where poisonous compounds are sold in sealed packages for agricultural, horticultural, disinfecting, and other trade or technical purposes, by persons other than chemists, who shall be duly licensed, and being respectable and responsible individuals, they shall be lawfully entitled to sell such articles.

It must be understood, however, that this desired result can only be obtained by the traders concerned bestirring themselves and bringing pressure to bear upon the Members of Parliament in their respective districts, pointing out to them the desirability of the Government being urged to bring in an amendment Bill for the purposes above indicated.

For every fully qualified chemist, there must be a large number of agricultural agents, horticulturists,

In saying this, allow me to add that we in no sense advocate, or desire to bring about, the indiscriminate sale of poisons. We urge that all retailers of them should be registered and licensed, and that those who are not pharmacists should sell only in sealed packages or vessels, without breaking bulk. By these precautions being observed, we contend that the public safety would be safeguarded quite as much as it now is, while the public convenience would be vastly increased. If other information is desired on this important subject, it will be readily furnished by yours faithfully, Thos. G. Dobbs, Secretary, 24, Sansome Street, Worcester, January 28, 1902.

P.S.—Since writing the above, according to the *Chemist and Druggist* (the trade organ of the pharmacists) of the 25th inst., it is admitted, to use their own words, "that the report (of the Poisons Committee of the Privy Council) will be to some extent opposed to the Pharmacy Act view of the sale of poisons."

to Esk Bank Station on the North British Railway, and walked to the gardens, the afternoon's sun was low. But contrary to expectation, I was fortunate in finding the new gardener, Mr. James Whytock, in one of the vineries, and he very kindly did all in his power to assist his unexpected visitor to see as much as was possible of this celebrated place.

The approach to the estate is not of the best description. The borough of Dalkeith impresses the visitor unfavourably. The houses are blackened by smoke, and the dwellings are small and mean in appearance; whilst the number of bare-footed "bairns," and of even

older individuals, that are seen in the streets and at the doors of the houses may be accepted as proof that the inhabitants generally are not in too comfortable circumstances. Such are the conditions of the main thoroughfare, and they approach almost to the great gates leading to the park.

Once upon any part of the estate of Dalkeith Palace, which it may be scarcely necessary to say is one of the residences of the Duke of Buccleuch, and the contrast afforded to Dalkeith itself is very impressive. Here is everything upon a grand scale. The Palace is large, the park is extensive, and contains very old timber trees, and the gardens are provided with everything necessary for the maintenance of a princely establishment.

IN THE GLASSHOUSES.

I have stated already that I found Mr. Whytock in one of the vineries, and that being so, he directed my attention at once to some Vines of the Sprotboro Muscat. Some gardeners believe this variety to be synonymous with Muscat of Alexandria, but at Dalkeith the blossoms set freely in a lower temperature than is successful in the case of the variety more generally cultivated. There is little doubt but that the Vines at Dalkeith have needed to be renewed in the past few years, and the new gardener has applied himself to the work at once. Consequently, some of the houses now contain quite young canes, and after a few seasons it is confidently expected that the yield of Grapes will be much greater and the quality superior. The Duke has built a new vinery as an encouragement. This structure is 75 feet long and 20 feet wide. It has a $\frac{3}{4}$ span roof, and is 20 feet high. The builders were Messrs. McKenzie & Moncur, and like most of their houses, this one is constructed of teak wood. The length of the house is relieved by a porch with lantern roof in the centre. The young Vines planted in this house had been raised from eyes started in the month of February. Some of my readers may think the house inconveniently high, and it is certainly unusually lofty, but I believe the dimensions were chosen by the Duke, and his gardener will doubtless be able to manage it satisfactorily. There are at Dalkeith, including the new one, eight vineries, one of which is very large. Most varieties of Grapes are cultivated, and Mr. Whytock has a very good opinion of the comparatively new Lady Hutt. In some of these vineries the system of glazing provides that the panes of glass overlap each other a little at the end, and there is $\frac{1}{8}$ -inch space between them, the lower pane passing, of course, under the higher one. This system answers perfectly, for there is no drip in consequence, and the air thus admitted in small quantities from the top of the house is very beneficial, and prevents scorching.

There are numerous Peach and Nectarine-trees indoors. In one of the houses, young trees had been planted in 1900, and in addition to others there is a Peach-house 250 feet in length, and adjoining this a similar structure also 250 feet long containing Plum-trees. Late Peaches and Nectarines were very plentiful at the time of my visit (September 3), and the trees appeared in good condition. Figs are cultivated in two houses which contain trees in pots and in borders. The forcing of Strawberries is a large item, as 6,000 plants are thus used. Favourite varieties are Keen's Seedling, Scarlet Queen, John Ruskin, and Royal Sovereign; but Mr. Whytock said their very best early Strawberry ripening at the end of February is Stevens' Wonder. Melons and Tomatos are grown in abundance. Of the former, the varieties known as Earl's

Favourite and Holborn Favourite are much prized.

I was next shown a feature that unfortunately is very rare in modern gardens, namely, a fine collection of Pineapples. These were in a low, three-quarter span-roofed, sunken pit, 200 feet long, with a path through it. Many gardeners, I know, are glad to be relieved of the care of Pine-cultivation, and owners are equally willing to be spared the expense of the necessary firing. But one notes the disappearance of the Pine-stove from a garden regretfully. The cultivation of Pines calls forth all the care and skill of a gardener, and a first-class fruit produced under the best cultivation is incomparably superior to most imported ones, that too many noblemen now rely upon exclusively. It is all in their favour at Dalkeith that coal is purchased there at 11s. the ton! What a boon would this be for Londoners!

In the pinery mentioned there were fine plants in flower of *Pergularia odoratissima*, and *Stephanotis floribunda*, neither of which harboured a single mealy-bug! Of the rest of the houses I must write very briefly. There were plenty of moderately-sized ornamental plants, suitable for table adornment or for furnishing vases, and excellent plants of *Coelogyne cristata* were remarked, 2 feet or more across them, *Caladiums*, *Cannas*, *Carnations*, *Streptocarpus*, and *Begonias*. *Calanthes* were looking well, and have doubtless made a good show of flower. In the stove, which contained larger-sized ornamental plants, were three fine *Musas*, and there is a house filled with *Camellia* plants, also a greenhouse, &c.

A CONVENIENT "POTTING-SHED."

Before passing from the glass structures, attention may be drawn to a new "potting-shed" that has been built under Mr. Whytock's directions. It is 60 feet long and 21 feet wide, and the roof is partly of glass. How great the contrast between this spacious, light shed and the potting-sheds in half the gardens in the country, which are small, draughty, and insufficiently light for the convenient discharge of the work that has to be done in them! The stokehole, too, at Dalkeith that leads to the powerful steel Cornish boilers (12 feet by 5 feet) is a most convenient one.

EXTRAORDINARY COLLECTION OF FRUIT TREES.

Of the kitchen garden, 4 acres are contained inside the walls, and 8 acres outside. It is divided by good broad walks, covered with loose gravel, and there is an old-fashioned sun-dial in the centre. Everything is maintained in a neat condition, and it was a pleasure to inspect the fine crops of vegetables that were then so plentiful. Probably there is no private collection of hardy fruit-trees so rich in variety as that formed at Dalkeith by Dunn, who had always a love for experiment, and thirst for increased knowledge at first hand. It was these characteristics that led him to plant nearly 200 varieties of Plums, 700 of Apples, and 500 of Pears. In an experimental garden these trees would now be of great value, if only as a means for the identification of fruits from time to time by comparison with living specimens, but they gave Dunn very much more trouble than fifty varieties of each would have done, and possibly the yield of fruit would have been much greater from the lesser number of varieties. In pruning and training also, Dunn tried most of the known methods for his own satisfaction, but the greater number of trees in the orchard are tall standards, with but few pyramids. Near to the glasshouses, and upon

either side of a path which leads to Mr. Whytock's house (see fig. 29), were exceedingly gay ribbon and hardy flower borders. There was nothing unusual among the plants used in them, but they thrived and flowered so well, that one turned again and again to look at the effect, which although so gay was harmonious, and proved that the arrangement of the plants had been given consideration. A somewhat formal flower garden is contained on a small lawn near to the kitchen garden, and shut off from the park by a wall on the east side. The walks between the beds are covered with white shell.

The wall just mentioned affords on this west side some protection to a choice collection of flowering and other shrubs, some of which grow in the border and others against the wall. *Choisya ternata*, *Cytisus pallidus*, *Olearias*, *Daphne hybrida*, shrubby *Spiraeas*, hybrid *Weigelas*, *Eleagnus*, double-flowered *Bramble*, *Nanthoceras sorbifolia*, *Syringas*, &c. Had there been more time, a closer inspection of the collection would have been of very great interest, for in this instance, Dunn's work is affording results in respect to new or little-known shrubs that would be profitable to all planters in this district of Scotland. In the same border *Eucalyptus Globulus* was 25 feet high.

AN OLD ROSE-TRELLIS.

An old rose-covered trellised walk abuts on to the lawn already mentioned. It covers a length of path of 500 ft., and among the old Rose-trees there are some varieties that may be now very rare. In addition to the Roses, there are Honeysuckles, Peas, &c.; and Mr. Whytock states that nearly always during spring, summer, and autumn, there is some plant or other in flower. This Rose-trellis, with an arbour at either end, is nearly a century and a-half old, and was moved by Macintosh, sixty or seventy years ago, from the old garden to the new one he was then engaged in forming.

Another collection of Roses worthy remark is contained in a hedge planted early in the last century, probably by Macintosh, or earlier. The varieties are double-flowered Scots Roses, and though there are now only ninety-one existing, it is said that the collection originally included 150 varieties, which at the time they were selected were thought to be not only distinct from each other, but the choicest obtainable. This broad hedge is about 100 yards long, and the varieties maintain a show of bloom for more than a month each year. The labels have long been lost from the plants, but each variety has been numbered and described when in flower with a view to identifying them. Many of them are exceedingly beautiful and fragrant, and such a quantity of them must scent the air for a considerable distance. These Roses were described at some length in the *Gardeners' Chronicle*, July 16, 1898, p. 41.

Dalkeith Palace stands on a terrace overlooking a deep valley where the river Esk flows through the grounds. There is a fine massive stone bridge over the river, and a waterfall behind; and on the terrace several fine Cedars of Lebanon. The view from the Palace embracing these and the wide sweeps of excellently maintained lawns is very enjoyable.

Dalkeith grounds include some part of the original Caledonian forests, and Oaks which are said to be 800 years old. In the pleasure-grounds are very many trees and shrubs of interest that I have not mentioned, including a large *Cedrus Deodara*, *Taxus adpressa*, *Hollies* in great variety, *Buddleia globosa*, *Kolreuteria paniculata*, and *Sequoia gigantea*.

pendula 18 feet high, said to be one of the first plants of this variety distributed. Its apex is still erect, not drooping, as in the specimen illustrated in the *Gardeners' Chronicle*, December 29, 1900, p. 478.

Mr. Whytock, a Scotsman, who came to Dalkeith from Earl Fitzwilliam's garden at Coolattin in Ireland two years ago last October, and who is now writing each week in these pages upon "Fruits under Glass," may be depended upon to maintain the gardens in first-rate condition, and keep the establishment to the front of Scottish horticulture by the practice of good cultivation. Mr. Whytock was once foreman in Dalkeith Gardens under the late Mr. Thomson, and his present position is the third he has held as head-gardener.

I returned to Edinburgh from Dalkeith railway station, reaching the City rather late in the evening. On the following morning, Wednesday, I had travelled to Glasgow by 9 o'clock to attend the second show in the International Exhibition, that of fruits and vegetables (an account of which was published in these pages at the time), and on Thursday morning at 8 o'clock was again in London.

Thus was "A Visit to the North" terminated, and therefore these notes may now conclude also with a grateful acknowledgment of the courtesy and kindness shown me by very many sympathetic horticulturists "across the Tweed." R. H. P.

LAW NOTES.

THE RIGHTS OF MARKET GARDENERS.

CLAIMS FOR ORCHARDS AND GLASSHOUSES: IMPORTANT JUDGMENT.

AN important judgment has just been delivered in the High Court by Mr. Justice Cozens-Hardy in the case of *Mears v. Callender*. This action was brought by a landlord against the outgoing tenant of a farm in respect to fixtures put up for market gardening purposes, and the result will interest all the market gardeners in East Anglia.

His Lordship said: About twenty years ago Mr. Joseph Mears bought of Mr. Wiltshire a farm called Kingwood Farm, in Oxfordshire. It was a purely agricultural holding. For some few years he occupied the farm, but on August 17, 1887, he granted a lease of it to the defendant for 7, 14, or 21 years, from Michaelmas, 1887, at the yearly rental of £165. Shortly after the lease, the defendant converted part of the meadow surrounding the house into an orchard. There are now upwards of 1200 trees in the orchard—Apples, Pears, Plums, and Cherries—in good bearing condition. These trees, though not capable of removal, are worth several hundred pounds to anyone taking the farm. The defendant also erected ten glasshouses, in which Grapes, Peaches, Nectarines, Tomatoes, and Strawberries were grown. From these houses he supplied fruit to Reading, and also to Covent Garden, and I think it is clear that he carried on the trade of a market gardener on the premises with marked success, and with the full knowledge of the landlord. The defendant gave notice to quit the farm at Michaelmas, 1901, and he claimed the right to remove the houses and to have compensation for the orchard trees. He pulled down three houses before action was brought, and the question raised in this action is whether the plaintiff, who is the present reversioner, can take the benefit of the orchard trees and of the remaining houses without making any compensation or payment for the same. The plaintiff's allegation that the defendant threatened to cut down or remove the orchard trees is not proved. There is some conflict of evidence as to the structure of the glasshouses. Upon the whole, I conclude that, as to one of the houses, which has concrete sides, and which was erected in or shortly after 1893, under the superintendence of Mr. Baker, the glass span-roof is not attached in such a way as to constitute it part of the freehold. I think it substantially rests by its own weight upon the concrete wall, and that it could be lifted up and removed without in any way pulling to pieces or damaging the walls. As to the other houses, wooden piles were driven into the ground, on the top of which wide sills were placed which supported the

glass span-roofs, except in the case of the vinery, where there was a lean-to roof. The roofs were nailed to the sills or backings, which in turn were nailed to the posts. Under these circumstances questions of importance and difficulty arise for my consideration. It is contended on the part of the plaintiff that the defendant is bound to leave the orchard and all the houses without claiming compensation. On the other hand, the defendant claims, both at common law and under the Agricultural Holdings (England) Act, 1883, as enlarged by the Market Gardeners' Compensation Act, 1895, to be entitled to remove or to have compensation for all the glasshouses, and he claims under those Acts to be entitled to compensation for the orchard trees. It will be convenient to consider—first, what are the rights of the parties irrespective of the Acts of 1883 and 1895, and whether, and to what extent, their rights are modified or affected by those Acts. Now, at common law, it is plain that the defendant could not cut down or remove the orchard trees or claim compensation. But, as to the glasshouses, a much more difficult question arises. If erected for the mere purpose of pleasure and ornament, and not for the purpose of a trade, they would not be removable—"Buckland v. Butterfield" (2 Broderip and Bingham, 54) "Jenkins v. Gething" (2 Johnson and Hemming, 520). If, however, they were erected, as in the present case, by a market-gardener for the purposes of his trade, different considerations arise. In "Penton v. Robart" (2 East, 88) Lord Kenyon intimated a strong opinion in favour of the tenant. On the other hand Lord Ellenborough, in the leading case of "Elwes v. Maw" (3 East, 38), did not approve of Lord Kenyon's observations, at least in so far as they might be taken to apply to agriculture:—"He"—i.e., Lord Kenyon—"certainly seems, however, to have thought that buildings erected by tenants for the purpose of farming were, or rather, ought to be, governed by the same rules which had been so long judiciously holden to apply in the case of buildings for the purposes of trade. But the case of buildings for trade has been always put and recognised as a known allowed exception from the general rule which obtains as to other buildings." I am not satisfied that Lord Ellenborough dissented from Lord Kenyon's view, so far as market-gardeners were concerned. If, however, there be any difference between Lord Kenyon and Lord Ellenborough, I prefer the view that glasshouses erected by a nurseryman for the purpose of carrying on his trade may be removed. The dicta of Lord Bramwell in "Wake v. Hall" (8 App. Cas., p. 240), support this view. Moreover, the whole tendency of the Courts in recent years has been to enlarge the rights of tenants in respect of fixtures. Nor do I consider that there is anything in Vice-Chancellor Kindersley's judgment in "Whitehead v. Bennett" (27 L. J., Ch. 474) which ought to lead me to a contrary conclusion. Therefore I think the defendant is entitled to remove the glasshouses. The next question is as to the effect of the Acts of 1883 and 1895. His Lordship having summarised the provisions of those Acts, proceeded: I think Parliament deliberately enacted for the benefit of market gardeners that, where a landlord had acquiesced in improvements by the tenant, the tenant should have the same right in respect thereof as he would have had if they had been executed after the Act of 1895. If so, it follows that the defendant is entitled to compensation for the glasshouses and for the fruit-trees, such improvements being taken out of the first part and placed in the third part of the first schedule of the Act of 1883. If, however, I am wrong in holding that the defendant will be entitled to compensation for the houses and orchard, under the Act of 1895, I think he will be entitled to compensation for the orchard, though not for the houses, under the Act of 1883. The landlord's consent in writing to planting the orchard was given by the lease. A landlord cannot impose as a condition of his consent to the term that no compensation shall be paid. The Act prohibits this. The result is that, in my opinion, the plaintiff fails in his contentions, and the action must be dismissed, with costs.

HOME CORRESPONDENCE.

ORANGES.—I have just read the note on "Abnormal Oranges" in the *Gardeners' Chronicle*, January 25, 1902. I can add some information concerning the matter, being acquainted with a dozen or so Orange-trees in Cannes, Nice, and San Remo, whose Oranges are always double-encincts, so to say. These trees differ in no respect from normal Orange-trees, but their Oranges are always double, and one can always see that they are so without opening them, as the distal end of the fruit is somewhat distended, as if there were a small burrow inside. This is the case specifically when the enclosed Orange is very small

or incomplete, for it stays at the distal end, between the skin and the large Orange. When the enclosed is large, it is to be found in the middle of the large one, and then there is no swelling at the distal end. The seeds give normal trees; abnormal Orange-bearing trees can be obtained only by cuttings or grafts from the latter. If you could send me some information concerning the Ladoo Orange, and also the seedless varieties, I should feel much obliged. H. de Varigny, Sc.D., 18, Rue Lalo, Paris.

EARLY FLOWERS.—In reading in the last issue of the *Gardeners' Chronicle* the names of the plants in flower in Mr. Broome's garden on January 18, I was reminded that on Jan. 9 we gathered from about four clumps of *Iris stylosa* a dozen perfect flowers, and since that date we have not been without flowers. At the time of writing, a dozen more might have been seen, and numerous buds visible. The clumps mentioned are growing in a border having a southerly aspect. I think that by affording it shelter from cold winds, *Iris stylosa* may be successfully grown anywhere in the Midlands, and some plants of it should find a place in every garden. J. Platt.

THE DUNN MEMORIAL FUND.—Having subscribed to the above fund, I should be interested to know what progress has been made, and how our money has been spent. Beyond a postcard acknowledgment of my contribution, no other information of any description was sent me. At the end of twelve months I wrote to one of the members of the committee asking him to give me information regarding the memorial; the reply I received was that a stone had been erected in Dalkeith Churchyard, which had not given satisfaction, and that a meeting was about to be called to consider the matter, after which a full report would be published in the gardening press. A year has passed, and still no report. I should like to know if it is a usual thing for subscribers to be treated in this way; if so, all I can say is, that the promoters of memorials are not likely to meet with success. J. Fulton, Grims Dyke, Harrow Weald.

THE BACK-BULBS OF ORCHIDS.—The correspondence that has been appearing of late in this journal in reference to the back-bulbs of Orchids must have suggested many ideas to the cultivator of these plants. I may say that I have cultivated Orchids continuously for twenty-three years as a gardener, and I am convinced that of all plants with which a gardener has to do, Orchids seem capable of standing more rough usage than any other plants; but on the other hand, no other plants give better results for good cultivation. I could record some interesting results of propagation, pruning, &c., but I should like to add a suggestion with regard to the long pseudobulbs of *Cattleya intermedia*, *C. Leopoldi*, and the like, which surely every grower would treat differently to those of *C. labiata*. Many persons will remember the beautifully grown batch of *C. nobilior* which came into Stevens' rooms from a Belgian firm some years ago. The treatment of this species was not well understood, and *connoisseurs* pronounced it a milfy, and the result was that there was no sale for it, and the lot, upwards of 150 potfuls, were sold at something like sixpence apiece. They came under my care, and I noticed that their mode of growth was very distinct; one bulb had leaves, the next apparently was deformed, with no leaves perhaps, and of very small size, then the next growth larger, with good leaves, and so on all through the lot. The fact suggested two growths in one season, but that by others was considered an unreasonable suggestion. However, I have proved without doubt that several varieties will do this successfully, and at this moment I have a plant of *C. intermedia* which has been well cared for during four years, and proves my contention. I purchased a small piece, two imported and one home-grown bulb, unfloated—a promising piece for what I had in view. That was in the month of November.

I placed it in warmth of 60°, and moist surroundings, and it started at once, made a growth, but did not flower. In the following month of August I shook it right out and re-potted it in peat and moss (not leaf-soil), and cut the imported pseudo-bulb away. It started again, and during the winter it made a growth just twice the size of the preceding one, and early in March it gave four fine flowers. I have never rested or dried it off, and it has twice since that time given four flowers and made one summer bulb, unflowered—that made in the winter always doing this. Now it is throwing up the largest growth it has ever had, and it is also breaking from the base of the third pseudo-bulb, and old and new are rooting vigorously. Let but imported plants once start roots, I am sure they will be found to succeed if they are kept growing. I have flowered *C. Leopoldi* with seven flowers from one sheath; and *C. amethystoglossa* also, under similar treatment, has made pseudo-bulbs 2½ feet long, and flowered freely—and I should have no hesitation in treating importations in like manner if I had the opportunity of so doing. *W. Gostling, Bournemouth.*

STREPTOSOLEN JAMESONI.—While visiting the gardens of A. H. Harman, Esq., Lower Greyswood, Haslemere, I was much struck with a fine display of *Streptosolen Jamesoni* in one of the greenhouses. The plants were over 9 feet high, growing in 10-inch pots, and clothed from top to bottom with fine trusses of bloom. Mr. Harris, the head gardener, informed me that he struck cuttings of this plant each year in the spring, and grew them on without pinching. A batch of plants grown in this manner would prove extremely useful in any establishment, especially when lofty conservatories and greenhouses have to be furnished with plants in flower at the present season. *J. Murray, Lythe Hill, Haslemere.*

EARLY PEAS.—Apropos of your articles on early Peas. Have we done anything for the earliness of Peas during the last 250 years? are they even as early as they were in the seventeenth century? On May 22, 1664, Mr. Pepys records in his diary, "So a good supper of Pease, the first I eat this year." Now these Peas must have been grown within a mile or so of London, and most assuredly grown in the open air; even with a good deal of coddling we cannot get Peas here in the open by the end of the third week in May, nor for a good many days after. A little farther on in the same year, he writes, on June 13, "Thence having a gally down to Greenwich, and there saw the King's works, which are great adoin'g there, and so to the Cherry Garden, and so carried some Cherries home, and after supper to bed." The Cherry Garden was on the bankside at Rotherhithe. Cherries were imported to the neighbouring county of Kent by Henry VIII. It seems that both Peas and Cherries were somewhat earlier in the reign of the Merry Monarch than "in this thin-faced time of ours." *Robt. Peel Sheldon, The Rosery, Twyford by Winchester.*

NITROGENOUS MANURES FOR PEAS.—Three years ago I grew twenty rows (of 150 feet) of Sweet Peas for cutting for market. The seed was sown about the last week in September, and with them I sowed a mixture of three parts (by weight) of superphosphate, and one part kainit; towards the end of January I thought I would try the effect of nitrate of soda on a part, as they did not appear to me to be looking as well as I could wish. I marked off 50 feet of each row, and gave a slight strewing of nitrate of soda; the result was apparent almost at once, and the flowers were ready to gather nine days earlier than the untreated portions of the rows, and the effect was also very marked in the increased length of the stems. I consider the result to be the more marked, as the nitrated portion of each row was the furthest from the shelter of the hedge; but the flowers spotted very badly whenever the weather was only slightly damp. I consider for early Peas or Beans an application of

nitrate of soda beneficial. I have tried it with later crops, but do not see any very decided benefit. I am advocating the use of nitrate of soda for early Leguminous crops in North Devon this spring, and several to whom I have recommended its use have promised to give it a trial, and some interesting lessons should be the result; and for the benefit of your readers, some at least of the results shall be sent you if you wish. *Albert J. Manning, Horticultural Instructor, Devon County Council.* [We shall be glad to receive them. Ed.]

— In dry soils, when trenching for mid-season and late Peas, it is good practice to place a layer of manure in the bottom of the trench (see p. 33), the manure retaining moisture, which is just what Peas in hot and dry soils, especially in the south of England, require. The frequent moistening overhead of the haulm after warm and dry days is also beneficial. On scientific grounds, the manuring of Peas in this way may be considered wasteful, but that view hardly comes within the scope of the present discussion. Besides, in many gardens Peas must be produced at all cost. As the matter stands at present, it appears to be one of those cases in which practice and results have "the pull" over theory. A solution may be found in the rejoinder of the darkey, who, on being interrogated as to why the muck made the corn grow so fast, replied: "It was in such a hurry to get up out of the way of the stench, it just grew and grew." *James Baxter.*

CLEANING THE LEAVES OF ORCHIDS.—My correction in the issue of the *Gardeners' Chronicle* for January 18 was simply the changing of the word "month" for the word "year," making it read thus, "at least once a year"; surely that does not convey the impression that no plant wants cleaning oftener. I quite agree with your correspondent, Mr. Bowyer, that if a plant gets covered and discoloured with dirt, it would be most injurious, whether it is a Cabbage or an Orchid. I assume that your correspondent quite agreed with a monthly sponging. Well, there is certainly one thing to be said in favour of it, we should never hear of any gardeners being out of situations. So far I have never found time to thoroughly cleanse all Orchids more than once a year. If the houses are kept as they should be, clear of insect pests, proper ventilation afforded, and the plants kept in a healthy state, they should not get into a very dirty condition. If your correspondent is so situated that he can find time to sponge his Orchids every month or so, I am not going to say they will not be benefited if carefully done. With perhaps the exception of *Phalaenopsis*, I have never yet found the necessity for such frequent sponging. I have never grown Cattleyas in a house containing much moisture; no doubt much moisture in a Cattleya-house would entail more cleaning than if the plants were grown in a sweet, well-ventilated house. I am a strong believer in cleanliness, and as soon as a plant has any dirt on it, that plant should be cleaned by all means. *W. P. Bound, Gatton Park Gardens.*

RATS AND BAMBOOS.—In that interesting and useful book, *The Bamboo Garden*, Mr. Freeman-Mitford says:—"The worst living enemies of these plants (Bamboos), especially of the dwarf species, appear to be the rats and voles, which will burrow under the wire-netting and gnaw through the stems in order to carry away the leaves for linings to their nests. It is not easy to suggest any remedy for this nuisance." At Pencarrow, Cornwall, early last summer some fine clumps of *Arundinaria japonica* growing on the bank of a lake were badly disfigured by water-rats, which gnawed through the culms at a height of about 4 feet. These detestable depredators were, however, soon shot. I am unable to assign a reason for this kind of mischief, as they did not, as in Mr. Mitford's case, carry away the stems or leaves wherewith to line their nests, nor did they eat any portion. Various theories were advanced, and for a time it was put

down to "sheer cussedness," till at last my employer (Mrs. Ford) expressed the opinion that as the culms of the Bamboos were nice and hard, and there being nothing else more suitable for their purpose, the water-rats had merely "sharpened their teeth" at the expense of our *Métaké*. And it is notorious that the front teeth of these rodents elongate to such an extent, that unless well ground back they would overlap those of the lower jaw, and the animal would, in consequence, die of starvation; this explains the otherwise unmeaning gnawing of doors, beams, and posts by rats and mice. *A. C. Bartlett, Pencarrow Gardens.*

BEGONIA SOCOTRANA.—The superb plants of *Begonia socotrana* shown at the Drill Hall meeting on Jan. 14 by Mr. Jennings, showed the great value of this plant as a decorative subject. Other gardeners have realised its worth, but in a different manner, viz., by using it in the crossing of other kinds. In this way this species would appear a favourite and in demand. And while this is so, its own merit—which, by the way, is as great or even greater than its crosses—has been kept out of sight, more or less, of the gardening public. The glossy peltate leaves of the plant alone formed an attraction, the freedom with which it flowers, and the length of the flower-stems, show it to be a plant of the highest class. Furnished with stems 18 inches and more in length, it is no matter for wonder that it finds favour for cutting purposes. Moreover, the plant is self supporting, and needs not even a central stake. The true pink colour of the flowers leave nothing to be desired, and Mr. Jennings may well be congratulated on his good culture, as well as the fact that he risked so fine a lot from safe-quarters at home on the eve of a very sharp frost. *E. Jenkins.*

EARLY SINGING OF THE THRUSH.—It may interest you and your correspondents to know that I have a thrush (caged) that commenced to sing the first week in December, and has been in full song this last month. He is hung out in the garden every morning, and sings against another thrush whose voice he can hear not far away. It is certainly very early for them to be so forward, but no doubt it is owing to the remarkable open weather we are having for the time of year. *A. W. Brooks.*

A METHOD OF BURNING ANTHRACITE COAL.—I have many times addressed you upon the subject of anthracite coal, and I strongly recommended it for greenhouse fires when it was at a reasonable price. Now that the best quality has gone up to 32s. a ton for delivery anywhere near London, I shall be glad to recount my experience. A coal merchant with whom I deal assured me that he could supply me with some very good anthracite, the same as I had had previously, at 26s. I agreed to take a truck, and he sent it in. When I tried it I found that instead of burning like the previous lot he had sent me, some of which still remained, it would not burn at all, in fact, it put the fire out when it was put on with the other anthracite coal. I at once got the coal merchant to come and examine it, and we certainly found that it differed considerably in appearance, and we sent samples to Swansea. The experts whom the matter was referred to wrote back to say that they had no knowledge as to where such coal could have been found, and begged for information. As I was in a fix, and some of the papers gave as a forecast the probability of very cold weather, I experimented by adding 25 per cent. of South Yorkshire to this non-combustible coal, and I found that it burned fairly well, but this was a great price to pay. I then further experimented by getting some small siftings from the coal-heaps, which came at a very much lower price, and to make this stop in the furnace we hit upon the plan of mixing these two sorts of coal with some water, and then putting it on the top of the fire, and it answers admirably. I send you this information in case, owing to the famine prices of anthracite coal, some of your readers

may be caught in the same way I have been, and they will know how to order, also how to get out of the difficulty should any of this coal from Cardiff have been sent in to them. Thos. Christy.

Obituary.

ALFRED WILLIAM BENNETT.—We greatly regret to have to announce the sudden death of this gentleman on the 23rd inst., at his residence, Park Village East, Regent's Park. Mr. Bennett, who was in his sixty-ninth year, was well known in botanical circles, having been lecturer on Botany at St. Thomas' Hospital for many years, and for a long period connected with the Royal Microscopical Society, of whose publications he was part editor. He contributed largely to botanical literature, having furnished a monograph of Polygalaceæ to Martius' *Flora Brasiliensis*, and similar contributions to some of the colonial floras prepared at Kew. In conjunction with Mr., now Sir William Thiselton-Dyer, he translated Sachs' *Text-Book of Botany*, assisted Dr. Masters in the preparation of the fourth edition of Henfrey's *Elementary Course of Botany*; and in conjunction with Mr. George Murray, brought out an excellent *Handbook of Cryptogamic Botany* (1889). He published various works on Alpine plants, paid great attention to the fertilisation of flowers by the agency of insects, and devoted much attention to the study of Algae. These brief indications will suffice to show the extent and variety of his work. Those who were associated with him will mourn the loss of a consistent and valued friend. Mr. Bennett was a Fellow of the Linnean Society, and a member of the Scientific Committee of the Royal Horticultural Society. It was he who prepared the original manuscript catalogue of the Lindley Library soon after its purchase by the Trustees in 1867.

DAVID SYME.—Many of our readers will learn with regret of the death of Mr. David Syme, the Managing Director of the firm of Peter Lawson & Son, Limited, of Edinburgh, which took place at New York, Lincolnshire, suddenly on Saturday morning, Jan. 25.

SOCIETIES.

ROYAL HORTICULTURAL.

JANUARY 28.—An ordinary fortnightly meeting of the Committees of this Society was held on Tuesday last in the Drill Hall, Buckingham Gate, Westminster. The display of exhibits was of moderate extent, and little greater than was the case a fortnight previously.

Orchids were fairly numerous, and the ORCHID COMMITTEE again considered a large number of novelties worthy a special award, recommending five Awards of Merit, two First-class Certificates, and one Botanical Certificate.

The FLORAL COMMITTEE recommended a First-class Certificate to a magnificent *Hemantthus* from M. LINDEN, Brussels; and Awards of Merit to *Begonia alba grandiflora* from Mr. LANGE, nurseryman, Hampton, and to *Primula sinensis* var. *The Duchess*, shown by Messrs. SUTTON & SONS, Reading. The largest exhibit before this Committee was one of *Primulas* from Messrs. SUTTON & SONS, and in addition to various minor exhibits, there was a collection of Ferns from Messrs. J. HILL & SONS, Lower Edmonton, a group of spring flowers from Messrs. BARR & SONS, and a group of bulbous Irises from Messrs. WALLACE & Co., Colchester.

At a meeting in the afternoon there were fifty-one new Fellows elected to the privileges of the Society; and a LECTURE upon "Renovating Old Fruit Trees" was given by Mr. GEO. BUNYARD, V.M.H., Chairman of the Fruit Committee.

Floral Committee.

Present: Charles E. Shea, Chas. T. Druery, H. B. May, James Walker, R. Dean, G. Reuthe, J. F. McLeod, James Hudson, John Jennings, W. Howe, C. R. Fielder, Chas. Dixon, Charles Jeffries, George Gordon, Chas. E. Pearson, Herbert J. Cutbush, George Paul, W. J. James, F. Page Roberts (Rev.), H. J. Jones, W. P. Thomson, E. H. Jenkins, and Charles Blick.

Coleus thyrsoides was again shown by Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road,

Chelsea, who on this occasion showed the stock plants from which the plants exhibited at the last meeting were struck in May last. These stock plants had apparently been stopped once after the cuttings were taken from them, and therefore bloomed a little later. The plants do not like too much heat during the summer.

Messrs. WALLACE & Co., Kilnfield Gardens, Colchester, showed a very interesting group of early-flowering Irises in pots. The varieties were numerous, and included the new *I. Tauri*, *I. Heldreichi*, *I. alata*, *I. Histrio*, *I. histrioides*, *I. h. major*, *I. Bakeriana*, and the distinct little yellow-flowered *I. Danfordiae*. Most of these Irises have been illustrated in these pages. There were also *Colchicum hydropilum*, and *C. libanoticum*, *Adeus amurensis*, *Galanthus Elwesii*, *Ikarie*, and *Whittalli*, and the early-flowering form of *Sternbergia Fischeriana* (Bronze Banksian Medal).

Messrs. GEO. JACKMAN & SON, Woking Nursery, Surrey, showed some good strong plants in pans, of *Iris persica Tauri* and *I. Tubergeniana*. The former was certificated a fortnight ago, and the latter last season. *I. Tubergeniana* is very handsome, by reason of its large, bright, white-edged foliage, with glaucous under-surface, and it continues to throw up fresh spikes of its yellow flowers for a considerable time.

A plant of *Loropetalum chinense* in a pot was shown by the Earl of LICHETER, Holland House, Kensington (gr., Mr. W. Dixon) (Vote of Thanks). Figured in *Gardeners' Chronicle*, vol. xix., n.s., 1883.

Mr. THOS. S. WARE, Ltd., Feltham, exhibited a collection of spring flowering plants in bloom in pots. Among these were *Eranthis cilicicus*, *Saxifraga Burseriana*, *Galanthus Whittalli*, *Gentiana acaulis*, several bulbous Irises, *Primula Forbesii*, &c.

Messrs. BARR & SONS, King Street, Covent Garden, London, W.C., exhibited a few hardy plants in pots which were arranged in such a manner that the pots were hidden by moss. There were Irises *Heldreichi*, *Danfordiae*, *Histrio*, *histrioides*; also several good varieties of *Helleborus niger*, including one named *Scoticus* (Bronze Banksian Medal).

Messrs. J. HILL & SONS, Barrowfield Nurseries, Lower Edmonton, Middlesex, made an exhibit of Ferns in pots. The varieties were chiefly popular ones, but included also some choice varieties of *Gymnogrammas*, *Polypodiums*, *Aspleniums*, &c. *Asplenium inaequale*, with most proliferous fronds; *Pellaea rotundifolia*, and *Ficus radicans variegata* were interesting (Silver Flora Medal).

Messrs. SUTTON & SONS, Reading, quite filled one of the long central tables with a display of varieties of *Primula sinensis*. The plants were in 5-inch pots, and the first trusses of flowers were nicely open. The variety of most immediate interest is described under "Awards." There was also a double-flowered variety of the same type as "The Duchess," possessing the rose-coloured ring of the latter. But as yet there exists only one plant. Another new double form had reddish-rose flowers. Of the older types there were groups of such varieties as *Giant Terra Cotta*, *Giant White*, *Giant Pink*, and mixed *Giants*, also single ones, including *Snowdrift*, *The Sirdar*, *Reading Blue*, *Royal White*, *Crimson King*, *Pearl*, *Brilliant Rose*, &c. Double forms included varieties of white, pink, and scarlet flowers, &c. In addition to all these, there were varieties of the *Stellate Primulas*, with pink, white, blue, or purple, and carmine flowers, &c. (Silver Flora Medal).

Awards.

Begonia alba grandiflora.—From the appearance of this *Begonia*, it would seem to be a sport from *B. Gloire de Lorraine*, but we do not know positively that this is the case. The flowers are larger than those of the variety *Caledonia*, and would be pure white were it not for the faintest tint of pink. The plants are vigorous in growth, and of good habit. From Mr. LANGE, nurseryman, Hampton (Award of Merit).

Hemantthus imperialis.—This is an exceedingly handsome *Hemantthus*, from M. LINDEN, Brussels. The flower-segments are very much larger and broader than those of *H. mirabilis* (figured in our pages, May 25, 1901), the segments being half an inch across and more than 1 inch in length; the flower-spike was about 15 inches high, and the colour of the flowers salmon-red (First-class Certificate). A plant of *H. mirabilis* in bloom was likewise shown.

Primula sinensis var. *The Duchess*.—This is a handsome and distinct variety of the Chinese *Primrose*, and was illustrated in the *Gardeners' Chronicle*, February 3, 1900. It is remarkable for a rich reddish-rose-coloured zone around the greenish-yellow eye, and a white margin. The flowers are of considerable size, and excellent form. This is the first occasion that Messrs. SUTTON

have exhibited so many plants of this novelty, which apparently comes very true from seeds. It will be welcomed in gardens as affording a distinct effect from any *Primula* at present in cultivation. From Messrs. SUTTON & SONS (Award of Merit).

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshaw, J. Coleman, J. Gurney Fowler, J. Wilson Potter, H. M. Pollett, H. Ballantine, Norman C. Cookson, R. Brooman-White, J. Douglas, E. Hill, F. A. Rehder, H. T. Pitt-G. F. Moore, T. W. Bond, W. A. Binley, H. J. Chapman, W. Boxall, W. H. Young, and H. A. Tracey.

Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), was awarded a Silver Flora Medal for a group which consisted principally of well-flowered *Phalenopsis*, many of which had been in the collection for fifteen years. The most numerous were the *P. Schilleriana*, including one of the pure white *P. S. vestalis*, and with them were good specimens of *P. Aphrodite*, *P. amabilis*, *P. x casta*; *Laelia anceps Hillii*, *L. a. Williamsii*, and a fine *L. a. Sanderiana*, with six flowers on the spike; *Odontoglossum x Loochristyense*, two forms of *O. x crispum-Harryanum*, a very fine *Miltonia x Bleuana*, *Cattleya x porphyrophlebia*, *Laelio-Cattleya x Cappei*, with three spikes; *Trichopilia marginata*, *Dendrobium x Wiganiae*, the true *Laelia praestans*, &c.

J. COLMAN, Esq., Gatton Park (gr., Mr. W. P. Bonnd), secured a Silver Flora Medal for an excellent group, principally of varieties of *Laelia anceps*, hybrid *Dendrobiums*, *Calanthes*, &c. In two sections of the group were massed well-flowered specimens of *Calanthe x Bryan*, and *C. x William Murray*, two of the best and most free-flowering; beside them were fine specimens of the favourite old *Zygopetalum Mackaili*, *Laelia anceps Schroderiana*, *L. a. Stella*, *L. a. Sanderiana*, and some pretty-coloured *Laelia anceps*, good *Odontoglossum crispum*, and *O. Andersonianum*; *Dendrobium x Juno*, *D. x Curtisii*, *D. x Cybele giganteum*, *D. x Ainsworthii*, *Woodhatch variety*, *D. x Rainbow*, *D. x Owenianum*, *D. x Burfordiense*, *D. x splendidissimum*, *D. nobile Amesiae*, *D. n. nobilium*, and others.

Messrs. CHARLESWORTH & Co., Heaton, Bradford, staged a small, select group, for which a Silver Banksian Medal was awarded. The centre was of five plants of the showy reddish-orange and crimson *Laelio-Cattleya x Charlesworthi* (*C. aurea x L. cinnabarina*), one variety differing from the others in having bright golden-yellow sepals and petals. On each side were vases of cut spikes of *Oncidium splendens*; and other remarkable plants were *Lycaste x Ballia superba*, *L. lasioglossa*, with a number of flowers; varieties of *Lycaste Skinneri*, of which the charming *L. S. "Lady Gladys"* was the best; and a fine example of the noble *Cypripedium x aureum Hycanum*.

H. T. PITT, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood), showed a finely blotched form of *Odontoglossum x Loochristyense*, closely resembling *O. x L. Kimberley*; a pretty variety of *O. x crispum-Harryanum*, and *O. pardunum*.

DE B. CRAWSHAW, Esq., Rosefield, Sevenoaks (gr., Mr. Stables), showed the purple spotted *Odontoglossum Pescatorei* *Rosefieldense*, the heavily blotched *O. x Andersonianum "Jupiter"*, *Laelia anceps Hollidayana*, *L. a. H. Crawshawana* (see Awards), and *Laelia x Nemesis* (*anceps x superbens*), a very interesting hybrid, which, although intermediate in character, presents the features and colour of *L. superbens* strongly.

F. WELLESLEY, Esq., Westfield, near Woking (gr., Mr. J. Gilbert), showed *Cypripedium x Hera superbum*, with a fine white upper sepal, greenish at the base, and densely blotched with dark purple; *C. x Celeus* (*insigne Chantini x villosum*), one of the finest of the *C. x nitens* class; *C. x Miss Castellani*, a distinct flower of *C. x Lecanum* section; *C. x Dr. Conway* (*exul x callosum*), a delicately-tinted flower with an emerald-green ground-colour, the upper part of the dorsal sepal being pale rose, changing to white towards the margin. The base of the upper sepal and inner parts of the petals were spotted with chocolate. Mr. WELLESLEY also showed *C. x rubescens "Ranjitsinghi"* (see Awards).

Messrs. HUGH LOW & Co. showed *Cattleya Trianae Roeblingiana*, a fine flower of the *C. T. Backhousiana* type; *C. T. Mrs. de B. Crawshaw*, large, and with an intense crimson crimped front to the lip, another good form of *C. Trianae*, and *Cypripedium x Thompsoni*.

W. P. BURKINSHAW, Esq., Hesse, Hull, showed *Laelio-Cattleya x luminosa* (*L. tenebrosa x C. aurea*), a pretty variety with bronzy-yellow sepals, and petals slightly speckled with rose, and a purplish-rose labellum with darker veining.

Frau IDA BRANDT, Riesbach, Zurich (gr., Mr. Schlecht), sent flowers of a natural hybrid *Lycaste* (? Skinneri \times lasioglousa), and a singular-looking green *Lycaste* sp., and *Maxillaria ochroleuca*.

Awards.

FIRST-CLASS CERTIFICATE.

Cypripedium \times *Yenus*, *Oakwood variety* (niveum \times insigne Sandere).—From NORMAN C. COOKSON, Esq., Oakwood, Wylam, Northumberland. A charming hybrid, large and distinct, and of most delicate tints. The flower is wax-like in texture, the petals long, broad, and curved downwards. The upper sepal was white, with a yellowish tint over the basal half, which was also dotted with minute purple spots. Petals cream coloured, undulate at the edge, and evenly dotted with purple; lip pale primrose, compressed laterally; staminode clear, pale yellow, with a green boss in the centre; foliage greyish, with dark green reticulation. A very worthy production, and by far the best of the *C. insigne* Sandere crosses, or of the crosses of *C. niveum* and *C. insigne*.

Lelia anceps *Hollidayana* *Crawshayana*, from DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks.—Flower large, white, with chocolate-purple lines on the inside of the side lobes of the lip, and a pencilling of rose-colour on the front lobe; crest yellow.

AWARD OF MERIT.

Cypripedium \times *rubescens* "*Ranjitsinghi*" (ananthum superbum \times Boxalli), from FRANCIS WELLESLEY, Esq., Westfield, Woking.—A very striking flower. Dorsal sepal nearly black, with a heavy purplish tinge at the back, showing through to the broad white margin of the upper portion. Petals and lip Indian-yellow, with a dark chocolate-purple tinge.

Cypripedium insigne *Fowlertanum*.—From J. GURNEY FOWLER, Esq., Glebelands, South Woodford. A very finely-formed variety of a dark tint. Upper sepal evenly blotched over the greater part of its surface with dark purplish-brown blotches; upper portion white.

Dendrobium Wardianum *Fowlertanum*.—From J. GURNEY FOWLER, Esq. The flowers all exhibited that form of peloria known as tri-labellia, the lower sepals being slightly modified like the labellum, and each bearing a yellow patch, and dark purple marking resembling the lip.

Laelio-Cattleya \times *Cappei* (*L. cinnabarina* \times *C. Warsceviczii*), from Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen.—Sepals and petals dark copper-yellow, lip crimson, with purple veining.

Lycaste Skinneri "*Lady Gladys*," from Messrs. CHARLES WORTH & Co., Heaton, Bradford.—This may be likened to the best form of *L. Skinneri* alba, with a delicate pale rose-pink freckling on the petals. A very chaste and beautiful flower.

ROBOTICAL CERTIFICATE.

Odontoglossum pardinum, from H. T. PITT, Esq., Rosslyn, Stamford Hill.—Flowers yellow, with brown markings; segments narrow, like *O. ramosissimum*.

CULTURAL COMMENDATION

To Mr. Quartermain, gr. to A. SETH SMITH, Esq., Silvermere, Cobham, for a very fine plant of *Angraecum sesquipedale*, with ten flowers.

To Mr. Stables, gr. to DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks, for a grand plant of the purple-spotted *Odontoglossum Pescatorei* *Rosefieldense*, with a branched spike of thirty-six flowers.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq., Chairman; and Messrs. Henry Eslings, Jos. Cheal, S. Mortimer, Alex. Dean, C. Herin, M. Gleeson, H. Markham, Geo. Kelf, Edwin Beckett, G. Norman, J. Willard, Jas. H. Veitch, H. Balderson, E. Shaw Blaker, and W. Wilks (Rev.).

Lieut.-Col. VIVIAN, Road Ashton, Trowbridge (gr., Mr. W. Strugnal), showed twelve dishes of Apples, uncommonly fine, well-preserved specimens in almost every instance. We remarked King of Tomkins County, Hoary Morning, Dutch Mignonne, Calville St. Sauveur, a green fruit; Newtown Pippin, Annie Elizabeth, Reinette du Canada, Claygate Pearmain, Norfolk Stone Pippin, Court Pendu Plat, and Gooseberry Pippin (a Silver Banksian Medal).

A dish of Benrre Rance Pears were shown by the Earl of LICHETER, Holland House, Kensington (gr., Mr. W. Dixon); the fruits were clean, and of average size, and showed how well some fruits can still be grown in London (Cultural Commendation).

A dish of five fruits of Pear-President Barabe were shown by Lord SUFFIELD, Gunton Park, Norwich (gr., Mr. Allan); they were fine examples of the variety (Cultural Commendation).

Mr. J. HARRIS, Blackpill Nurseries, Swansea, showed

Potato "Sir John Llewelyn," grown in open field; also samples of the same garden-grown, the latter being much the finer-looking sample. The tuber is flat, kidney-shaped, and very regular in outline (a Cultural Commendation).

Renovating Old Fruit Trees.

In the afternoon Mr. GEO. BUNYARD delivered a short lecture on "The Renovation of Old Fruit Trees," gave many hints, gained by much personal experience, and opened up an exhaustive disquisition upon a subject which has already been discussed. He said that whilst Pears are particularly amenable to this treatment, most stone fruits are not. Plums, Peaches, and Nectarines that have become unfruitful from age or neglect are best destroyed, and young trees substituted for them. Stone fruits, as a rule, will not endure the severe pruning that is necessary in an attempt to restore them to a fruitful condition. Cherry-trees in orchards, however, are exceptions, and may be successfully treated. Mr. Bunyard advised that in such a case all the useless wood and branches should first be removed from the trees; also any that are broken or cracked, or that tend to crowd the centre of the trees. If the land be pasture, then mow the grass, and clear away everything in the nature of prunings, &c., afterwards applying 2 cwt. of salt to the acre. When the grass has grown again, turn sheep into the orchard and feed them with oilcake and other good food. The sheep will eat the grass so short that it resembles a Turkey-carpet, and their droppings will be of great value to the roots of the trees.

Mr. Bunyard gave some hints upon restoring Pear-trees against walls. One system is to cut out every other tier of branches, and encourage new ones in their places. Subsequently, the alternate branches may be also removed, and the tree will then be composed of new wood, with the exception of the main stem. A more radical method is to cut down the main stem itself to a point just above the lowest tier of branches, and get a new stem and branches. Mr. Bunyard has recently seen a very good illustration of success following such practice. If the Pear-trees are not of good varieties, the laterals may be grafted 1 foot from the stem, with one variety, or with as many varieties as there are branches, thus making the tree serve to test new or little-known sorts. A good mulching may be afforded the ground, when the trees have been treated as described.

Pears on the Quince, and Apples on the Paradise stock, and planted in the open, said Mr. Bunyard, may be treated more easily than trees on the free-stock. Dig out a trench around the tree, and cut away the loose, rough roots, afterwards filling in with fresh loam. The trees will be in excellent condition for removal the following year, and it is best to move all the old trees into a new plantation of themselves. They can thus be afforded fresh rooting medium, and there can be effected a renewal of the soil where the old trees stood previously. Further hints were given upon the renovation of pyramidal Apple and Pear-trees, cordons on walls, Fig trees, and Vines.

Strawberries, said Mr. Bunyard, are best renewed after two years, or if a "lazy" bed be wished for supplying fruits for preserving, then keep them for three years.

HEREFORDSHIRE FRUIT GROWERS' ASSOCIATION.

JANUARY 23.—The third annual meeting of the Herefordshire Fruit Growers' Association was held at Hereford on the above date, Mr. C. W. Radcliffe Cooke presiding. In resigning the Chairmanship, Mr. Cooke congratulated the Association on the fact that it had a membership of 262. Besides the Association operations, it advertised Herefordshire as one of the best fruit-growing districts in the world. He pointed out various ways in which the Association might make itself useful in the current year, in addition to its field meetings and discussions. They might press upon the Corporation to still further enlarge the wholesale fruit market, which was attended by dealers from the Midlands and Wales, and which had become too small; and they might see what could be done in regard to securing uniform weights and measures in the sale of the fruit. A Committee was appointed to wait upon the Corporation.

Mr. George Cresswell was elected President, Dr. Bernard Dyer (who had been making experiments in fruit fertilisers) was appointed Analyst in the place of Dr. Voelcker, and Mr. R. Newstead was appointed Entomologist.

Mr. Machen suggested the giving of prizes for the best-managed orchards. Mr. Dawes, Ledbury, was added to the Committee.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

ANNUAL REPORT.

THE Committee have much pleasure in submitting their annual report and statement of accounts, as audited, for the year 1901, and in doing so congratulate the subscribers and friends of the institution on its continued prosperity and the success which has attended its efforts on behalf of the aged, disabled, and distressed people who have been obliged through misfortune and necessity, occasioned by no fault of their own, to seek its benefits, and the aid thus afforded, it is encouraging to know, is most gratefully appreciated by the recipients in their days of need.

At the beginning of the year 181 persons—98 men and 83 widows—were receiving life annuities of £20 and £16 respectively. Of this number, during the year thirteen had passed away—ten men and three widows—whilst two widows have been removed from the list, one having been sent to an asylum owing to her mental condition, and the other to an infirmary on account of advanced age and illness, and consequent inability to pay for the medical attendance and nursing she now requires. Of the men deceased, four left widows, and their circumstances being of a deserving and necessitous nature, the committee have been enabled under their rules to award them the widows' allowance of £16 a year. There were, therefore, at the close of the year, 170 recipients of permanent relief, and the committee, notwithstanding that they have eleven vacancies only, recommend an addition of twenty pensioners to be elected this day, making a total of 190 persons on the funds, being nine more than at the corresponding period of last year, and the largest number of beneficiaries receiving life annuities from the Institution in any year since its foundation. Whilst the committee are keenly alive to the increased liability thus entailed, they have been influenced in their action by the generous financial support hitherto accorded to the institution, which they are encouraged to hope will be continued and increased in the future, so that there will be no necessity for the work to be in any way curtailed.

The committee are much gratified to be able to report that the Anniversary festival dinner, which took place in May last, under the presidency of the Right Hon. Lord Llangatock, was most successful, a substantial amount being realised in aid of the funds. For this pleasing result the committee are deeply thankful, and desire to place on record their great indebtedness to Lord Llangatock for his kindness in presiding, his able and warm advocacy of the Institution's claims, and for his lordship's generous contribution to the funds. The committee take this opportunity of offering their sincere thanks to the stewards, collectors, donors of flowers, the horticultural Press, and to other helpers who contributed in any way to make the festival a success.

The Committee have much pleasure also in drawing attention to the continued progress of the valuable auxiliaries, from which the following amounts have been received during the past year: Bristol and Bath (hon. sec., Mr. G. Harris), £80 17s.; Devon and Exeter (hon. sec., Mr. W. Mackay), £30; Reading and District (hon. sec., Mr. H. G. Cox), £70 7s.; Wolverhampton (hon. sec., Mr. Richard Lowe), £20; Worcester (hon. sec., Mr. Percy G. White), £85. The hon. secretaries are most cordially thanked for their valued services so ungrudgingly given to the cause, as are also other friends in various parts of the country who, either by arranging concerts, opening of gardens, holding flower stalls, or in other ways so generously furthered the interests of the institution.

The Committee are glad to be able to state that the special funds have proved a source of incalculable benefit. From the "Victorian Era Fund" nearly £100 was distributed during the past year amongst the unsuccessful candidates at the last election who were formerly subscribers to the Institution, whilst a sum of £48 has been given from the "Good Samaritan Fund" as a temporary help to several cases of a particularly distressing nature. This latter fund has been augmented in the past year, and the Committee rejoice that the increased income from that source will enable them to respond favourably to more of the many pathetic appeals which so frequently come before them. They would, however, again point out that only the interest derived from this fund is available, and they therefore very earnestly commend its object to those friends who have it in their power to increase its usefulness.

The committee have to make the very gratifying announcement that his Royal Highness the Prince of Wales has graciously consented to succeed his Majesty the King (now Patron) as President of the Institution, for which mark of Royal favour and recognition they are deeply grateful, and they feel sure that every friend of the Institution will unite with them in tendering his Royal Highness their most humble and respectful thanks.

The committee congratulate the members on the alterations in the rules which have been this day decided upon at the special meeting, feeling convinced that they will very largely conduce to the still greater success and well-being of the Institution in the future.

The committee cannot conclude their report without referring with great regret to the many losses that have occurred through death in the past year amongst the valued friends and supporters of the Institution. These losses will be severely felt, and the committee therefore plead most earnestly for renewed effort to fill the places of those subscribers who have passed away, that the work may be not only maintained, but that further help may be forthcoming to such an extent as to warrant an enlargement of its beneficent agency on behalf of a class who in their day have done so much to brighten the lives and minister to the necessities of others.

BALANCE SHEET, 1901.

| Dr. | £ | s. | d. | £ | s. | d. |
|---|--------|-----|-----|-------|----|----|
| To balance | ... | ... | ... | 1,028 | 3 | 3 |
| „ amount on deposit | ... | ... | ... | 3,315 | 10 | 0 |
| „ annual subscriptions... .. | 1,533 | 16 | 4 | | | |
| „ donations at and in consequence of festival dinner, including collecting cards | 1,636 | 7 | 3 | | | |
| „ return of income tax | 42 | 19 | 3 | | | |
| „ advertisements in annual list of subscribers | 51 | 6 | 0 | | | |
| „ dividends and interest | 903 | 3 | 7 | | | |
| | | | | 4,167 | 12 | 5 |
| Total | £8,511 | 5 | 8 | | | |
| Cr. | £ | s. | d. | £ | s. | d. |
| By pensions and gratuities | ... | ... | ... | 3,155 | 11 | 8 |
| „ expenses, annual meeting and election | ... | ... | ... | 10 | 5 | 9 |
| „ secretary's salary | 275 | 0 | 0 | | | |
| „ office assistance... .. | 29 | 12 | 3 | | | |
| „ rent, cleaning, firing, light, &c. | 88 | 17 | 11 | | | |
| | | | | 393 | 10 | 2 |
| „ printing, including annual reports, appeals, voting papers, &c. | 119 | 11 | 6 | | | |
| „ stationery, &c. | 20 | 14 | 3 | | | |
| „ cheque books | 6 | 1 | 4 | | | |
| „ festival expenses, £191 4s. 7d.; less dinner charges, £119 14s. | 71 | 10 | 7 | | | |
| „ wreath, address, &c., Her Majesty Queen Victoria | 6 | 19 | 6 | | | |
| „ postage, including reports, voting papers, appeals, &c. | 53 | 0 | 0 | | | |
| „ travelling expenses | 5 | 13 | 9 | | | |
| „ carriage, telegrams, repairs, and incidental expenses | 7 | 16 | 7 | | | |
| „ bank charges | 0 | 2 | 6 | | | |
| | | | | 291 | 10 | 0 |
| „ amount transferred to "Good Samaritan Fund" | 1,000 | 0 | 0 | | | |
| „ amount placed on deposit | 2,715 | 10 | 0 | | | |
| | | | | 3,715 | 10 | 0 |
| „ balance with treasurer | 940 | 13 | 1 | | | |
| „ „ „ secretary | 4 | 5 | 0 | | | |
| | | | | 944 | 18 | 1 |
| Total | £8,511 | 5 | 8 | | | |

VICTORIAN ERA FUND.

BALANCE SHEET, 1901.

| Dr. | | | | £ | s. | d. | £ | s. | d. |
|-------------------------------------|-------|-----|-----|-----|-----|-----|------|----|----|
| To balance | ... | ... | ... | | | | 72 | 16 | 7 |
| „ dividends | ... | ... | ... | 124 | 14 | 0 | | | |
| „ return of income tax | ... | ... | ... | 6 | 0 | 7 | | | |
| | | | | | | | 130 | 14 | 7 |
| | Total | ... | ... | ... | | | £203 | 11 | 2 |
| Cr. | | | | £ | s. | d. | £ | s. | d. |
| By gratuities | ... | ... | ... | ... | ... | ... | 91 | 5 | 0 |
| „ balance, December 31, 1901 | ... | ... | ... | ... | ... | ... | 112 | 6 | 2 |
| | Total | ... | ... | ... | | | £203 | 11 | 2 |

GOOD SAMARITAN FUND.

BALANCE SHEET, 1901.

| BALANCE SHEET, 1901. | | | | | | | | |
|--|-----|-----|-----|-------|-----|--------|----|----|
| Dr. | | | £ | s. | d. | £ | s. | d. |
| To balance | ... | ... | ... | ... | ... | 561 | 15 | 1 |
| „ donations, 1901 | ... | ... | ... | 222 | 3 | 0 | | |
| „ dividends | ... | ... | ... | 38 | 10 | 0 | | |
| „ return of income tax | ... | ... | ... | 0 | 18 | 1 | | |
| „ amount from deposit account of general fund | ... | ... | ... | | | 261 | 11 | 1 |
| | ... | ... | ... | | | 1,000 | 0 | 0 |
| Total | ... | ... | ... | | | £1,823 | 6 | 2 |
| Cr. | | | £ | s. | d. | £ | s. | d. |
| By gratuities | ... | ... | ... | ... | ... | 48 | 0 | 0 |
| „ purchase of £536 19s. 9d. 2½% Consols | ... | ... | ... | 520 | 0 | 0 | | |
| „ purchase of £510 Great Western Railway 5% Debentures | ... | ... | ... | 1,001 | 8 | 0 | | |
| | | | | | | 1,521 | 8 | 0 |
| „ balance in hand, Dec. 31, 1901 | ... | ... | ... | | | 253 | 18 | 2 |
| Total | ... | ... | ... | | | £1,823 | 6 | 2 |

Having audited the accounts, we certify the same correct, and the books in good order. We also certify that the securities of the invested funds are in the hands of the bankers, by whom the dividends are received on behalf of the Institution. *Thomas Manning, Thomas Swift, Jcs Ward.*

WARGRAVE GARDENERS'.

JANUARY 15.—The annual meeting of the Association took place on the above date, Mr. W. H. Scott presiding. Mr. W. H. Scott read his 1st prize essay on "How to keep the Flower Garden gay during the Year." He treated the subject in calendar form, giving the work of the gardener from month to month, beginning with October. Lists of flowers, shrubs, bulbs, &c., which could be used in any way, with brief cultural directions, were given. He was heartily congratulated on his treatment of the subject. *H. Coleby, Hon. Sec.*

LEICESTER CHRYSANTHEMUM.

JANUARY 23.—The annual meeting of this Society was held on the above date, Alderman G. COLLINS in the chair.

The Chairman moved the adoption of the report and balance-sheet, and said the Society had not made much money, but they were on the right side. The Society was not formed for the purpose of making money; their object was solely to encourage horticulture, and especially the cultivation of Chrysanthemums and fruit. The report was then adopted.

Officers were elected as follows:—President, Alderman Collins; Hon. Treasurer, Mr. John Whit; Hon. Secretary, Mr. S. Scattergood.

CARDIFF AND DISTRICT CHRYSANTHEMUM.

JANUARY 24.—On the above date a large gathering of members and friends attended the annual meeting of this Society. The chair was occupied by Mr. G. SHEWRING.

The meeting decided to hold their annual show on November 5 and 6. It is understood that an amalgamation of the Penarth Society with that of this Society is to take place.

Mr. Geo. W. Drake, of Cardiff, was presented with an illuminated address, in recognition of his having won single-headed the National Society's Trophy for the Cardiff Society. *H. Gillett, Secretary.*

WOOLTON HORTICULTURAL.

THE annual general meeting was held in the Mechanics' Institute on Friday evening, Mr. J. Stoney, gr. to F. H. Gossage, Esq., Camp Hill, presiding. The Secretary's report proved to be very satisfactory.

LIVERPOOL HORTICULTURAL ASSOCIATION.

THE Committee of this Association are to be highly congratulated on the improved financial position of the Association disclosed at the annual general meeting, held in the Secretary's Offices, Victoria Street, on Saturday evening last, the numerous attendance being presided over by Mr. Thomas Foster, Chairman of the Association.

To the Gardeners' Royal Benevolent, and the Royal Gardeners' Orphan Fund the sums of three and two guineas were respectively voted. *Orchid.*

GRAND YORKSHIRE GALA.

THE annual meeting of the guarantors and life members of the Grand Yorkshire Gala has just been held. Sir C. MILWARD presided, and there were present the Lord Mayor, the Sheriff, several Aldermen and Councillors, and other well-known gentlemen in York.

The Lord Mayor, in acknowledging his election, said that it was true that he had been associated with the Gala for a great many years—he did not know exactly whether it was twenty or twenty-five—and he had always taken a great interest in it. It was a pleasing circumstance that this year they had the Lord Mayor and the Sheriff as Chairmen of the two important committees, the Finance and the Entertainment Committees. He hoped that the forthcoming Coronation would not detract from the popularity and success of the Gala. He alluded to the satisfactory fact that they had on the Council some of the most prominent business men of the city, which was, he believed, a cause of the great success of the Gala.

Alderman Border moved the re-election of Alderman Sir Christopher Milward as Chairman, for it was to him that they looked as their natural head.

The Chairman said that he would retain the position with great pleasure. With regard to reducing the schedule, they could not materially do so without running the risk of losing some of the exhibitors.

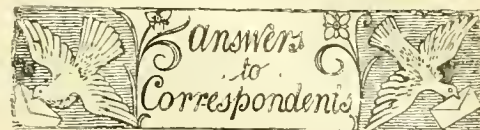
Alderman Border was re-elected Vice-Chairman, and Alderman Sir J. Sykes Rymer as Treasurer.

Alderman Dale moved the re-election of Mr. C. W. Simmons as Secretary, speaking of his great business aptitude, and the esteem and respect in which he was held.

Mr. Taylor was elected Auditor for the ensuing year.

The Council and the various committees were re-elected, and the various amounts allocated for prizes, entertainments, music, and fireworks.

It was resolved to send votes of condolence to the families of Mr. Cypher, Mr. Jackson, and Mr. Brock.



ALLAMANDA WILLIAMSH: S. H. G. If you cannot afford the plant the fullest amount of sunshine, and train it not less than a foot distant from the roof-glass, it will not flower satisfactorily. In order to flower it early, a start should have been made early in January. Allamandas last five to six months in bloom. Young plants struck from cuttings last year cannot be expected to flower much this year, indeed it would be better to remove the flowers.

AN ASPHALT FLOOR IN A CONSERVATORY: A. F. This is another instance, if one were needed, of the folly of consulting the ordinary architect in matters horticultural. As no flowering plant will live in the house, your only course is to replace it with cement tiles, ornamental, or plain, or stone.

AZALEA INDICA CASTING ITS LEAVES: E. T. Azalea plants will cast their leaves in some quantity yearly, and it depends on treatment how many and when they are cast. Plants kept cool and moderately dry at the root, as they should be when not forced in the winter season, retain their leaves till growth begins, when some of them are sure to fall. It is not a disease, and there are no signs of thrips on the leaves sent.

BOOKS: *Botanical Works.* M. E. Orr. If you will kindly furnish us with your correct address, we will reply to your questions through the post, as our previous reply was returned. — *Ralph Landless. Monograph of British Coccidae of the British Isles.* The book is furnished only to Fellows of the Ray Society.

CARNATIONS DISEASED: *Carnations.* The plants sent are attacked by a fungus, *Helminthosporium cecidivatum*, for which, owing to its attacking the plants from inside, there is no cure. Burn the plants forthwith, and grow no more on the same spot.

CHRYSANTHEMUMS: *Amateur.* Your list of incurred varieties is a good one. If you add to this, you may obtain Queen of England and any of its sports; Topaze Orientale, Louisa Giles, Mrs. H. J. Jones, Annie C. Love, W. Howe, and Mrs. Gerald Williams. There have been few additions of late years to the old-fashioned reflexed blooms, which, though not large, possess a degree of refinement, sometimes greatly lacking in the larger Japanese flowers. Your list is sufficiently representative, if you obtain the additional varieties you have suggested. There are few exhibitors of this type, and if you grow them well there is every probability of your winning a prize. We have not space to describe times for stopping and "taking" the buds of each variety, but you may obtain trustworthy information upon such details in the catalogue of a reputable raiser or grower. We have not recommended you to get this season's novelties, because an amateur is more likely to succeed with better-tried sorts, but if you have the necessary conveniences to grow rather more plants than you expect to need, then the cultivation of the latest novelties has a fascination not easily resisted. All of the varieties which have been certificated this season by the National Chrysanthemum and Royal Horticultural Societies have been described in these pages during November and December, from the actual flowers exhibited.

CODLIN-MOTH AND GREASE OR TAR BANDS: W. W. To begin the cycle of existence of this most destructive insect, the better to understand the means to be adopted for

its destruction; it may be stated that the grub having fed first on the pulp and then on the pips of the Apple, comes to the ground with the fall of the fruit consequent on the destruction of the seeds, lies still for a day or two, then crawls up the Apple-tree stems, selects a crevice of the bark, in which, having made it smooth, it spins a silken case, in which after a few weeks, it becomes a chrysalis, and in this state remains till the following June. In that month it is on the wing, depositing one egg on each Apple visited, which is deposited near the eye, where the skin is thinnest. The grub, on hatching out, pierces the fruit diagonally, avoiding the core at this period, and confining itself to the pulp, and piercing the skin at its lowest point, thus finding an easy outlet for the pellets, and an inlet for the air. Within a few days of being full fed, it pierces the horny core case, and eats the pips. It will thus be seen that grease or tar bands are of use in arresting the grubs after they leave the fruit, say in July, and climb the trees, and the moths in June, when they assemble in the daytime on the stems of the Apple-trees. It is also a good practice to make smother fires of weeds under the trees in the middle of June, in order to drive away the moths. When grease or tar bands are used, there should be wider bands, say 8 in., of grease-proof paper, bound round the trees, to prevent the grease, &c., entering the bark. The horticultural sundriesmen and nurserymen sell special preparations for smearing the bands. The wingless winter-moth and its caterpillars are caught by the same sort of bands put on the trees about the middle of October.

"COPY." H. C. writes, "at this dull season perhaps you could insert the enclosed" (something like three columns of printed matter). If our correspondent could see the hopeless heaps of "copy" on our table, for which it is impossible to find room, even by an increased number of pages, he would not say it was the dull season, but he would compassionate us in our constant struggle against the exigencies of space.

CYPRIPEDIUMS AFTER FLOWERING: *An Old Subscriber*. The plants having no pseudobulbs or fleshy roots, must be afforded water according to their needs all the year round.

DRACENAS: *An Old Subscriber*. A few leaves, the oldest, fall each year; but the crowding together of the plants, with consequent lack of light and air, will cause the fall of more leaves than would otherwise be the case.

FERN IN THE DINING-ROOM WINDOW: *Tooting Bee*. The air of a living-room being too dry to suit Ferns, you can only do them justice in a glass case. If the plant is found not to be dead on turning it out of the pot, shake the outer layer of soil from it, and repot, doing this in March. No top-dressing will be of any avail before growth has commenced. Perhaps a top-dressing in March would suffice, if not many roots have been made, and the soil is sweet. Ferns do not require much larger pots than will accommodate the roots without cramping them, together with a moderate portion of peat, or peat and loam.

GARDENERS' ROYAL BENEVOLENT INSTITUTION: J. C., and L. C. T. Name of Secretary, Mr. G. J. Ingram, Office, 175, Victoria Street, London, S.W.

GARDENING APPOINTMENT IN SOUTH AFRICA: R. James. But small chance of obtaining a situation as gardener before the country settles down at the close of the war. We are unable to say how a post could then be obtained by anyone on this side, excepting through an advertisement in this or the Cape of Good Hope journals.

GRAFTING LILAC: B. Brown. Being provided with your wildlings or suckers, laid in the soil in late autumn, they can be taken into a cold-house or shed at this season, and grafted by any of the usual methods, whip, cleft, or tongue, and at once laid-in in a cold-pit or frame, and kept as quiet as possible by good

ventilation when there is no actual frost, till the middle of March, when they should be bedded out in close lines in the nursery or reserve-garden.

HOW TO BECOME A FELLOW OF THE ROYAL HORTICULTURAL SOCIETY: J. M. You should write to the Secretary, Rev. W. Wilks, at the office of the Society, 117, Victoria Street, London, S.W., who will gladly furnish you with the desired information.

INSECTS: *Anxious*. The insects you describe as being similar to the house-flea have certainly one characteristic possessed by that nimble insect. We are unable to find them.

INSECTS IN SOIL: G. Bethel. 1, the grubs of *Tipula oleracea*, Daddy Longlegs; 2, the grey, vermiform grubs are the larvae of a species of *Mycetophilæ*, belong to a family of small, active gnats, the grubs of which frequent damp situations amongst various plants, including also *Boleti* and other fungi. In the absence of natural food they might possibly attack cultivated plants; but they are not included among the recognised pests of the horticulturist.

LILACS: J. W. The plants were doubtless not well cultivated, or the wood insufficiently matured; the wood and buds being thin and lacking in size.

MANURE FOR SWEET PEAS: S. P. Muriate of potash at the rate of 2 oz. to the square yard, applied twice or thrice as a top-dressing in wet weather. The land should be deeply dug and in good heart; bone-meal is too slow in its action. Sow thinly, and keep the pods diligently picked off the plants, for you cannot have many flowers if seed be allowed to form. Do not allow the ground alongside the rows to become long impervious to the air, but stir it frequently.

MARGUERITES: J. B. Why address the publisher on such a matter? Your plants probably received a check from cold some weeks since.

MUSHROOM ABNORMAL: Alex. Innes. Not uncommon. The spawn has overrun the Mushroom. Similar specimens, even more remarkable, have been figured in our columns.

NAMES OF PLANTS: W. H. O. 1, *Cypripedium × selligerum*; 2, *Cypripedium × Ashburtoniæ*; 3, *Cypripedium × Harrisianum*; 4, *Oncidium excavatum*, often called *Oncidium aurosum* in gardens.—F. P. Probably a species of *Geum*. How can it be a cure for dropsy? Dropsy is not a disease itself, but the result of disease in the heart, kidneys, or liver. Cure them, and you cure the dropsy, not otherwise.—*Weekly Subscriber*: Yarmouth. 2, *Acalypha marginata*; 3, *Lilbonia floribunda*; 4, *Agatheca cœlestis*; 5, *Thuja occidentalis*; 6, *Epiphyllum*.—L. C. T. *Lavatera arborea variegata*.—S. H. 1, *Centropogon Lueyanus*; 2, *Begonia argyrostigma*; 3, *Begonia Dregei*, often called *B. parviflora*; 4, *Begonia metallica* of gardens; 5, *Selaginella cœsia*; 6, *Selaginella denticulata*.—S. & M., Kelso. Apparently a leaf from *Galax aphylla*.—J. M., Devon. *Helleborus subpunctatus* (white). The purple-flowered vars. are derived from various crosses of *H. colchicus*, *H. orientalis*, and others. The other flowers sent were very nice for the season, and much earlier than the same would be in most other parts of the country.

NOTICE TO QUIT SERVICE: G. S. In law the gardener is a domestic servant, and as such is entitled, in the absence of an agreement to the contrary, to a quarter's notice, although in practice it is found more agreeable to employer and servant to shorten this to one month. A gardener living rent free in a house on an estate, and enjoying various perquisites, if he has to leave at short notice, can obtain compensation for insufficient notice, for wages, rent, and perquisites due during the unexpired term.

POTATOS DISCOLOURED: F. N. An early stage of the Potato disease, *Phytophthora infestans*, figured in these pages Dec. 13, 1884, and March 21, 1891.

REMOVAL OF TREES AND ON THE TERMINATION OF A TENANCY: G. W. S. See "Law Notes" in present issue, p. 83, for the latest decision in the Courts.

ROSE ON A N.-W. ASPECT: *Tooting Bee*. The plant may grow fairly well on this rather sunless aspect, but we should doubt its capacity to flower in a satisfactory manner. Rather plant a *Clematis*, *Jasminum revolutum*, *J. nudiflorum*, *Berberis stenophylla*, *Kerria japonica*, or *Aristolochia Siphon*.

SAN JOSÉ SCALE: D. D. C. Our figure was derived from an original source. The two groups are nearly allied.

SEED SOWING, TIMES OF SOWING, TRANSPLANTING, &c.: *Interested*. The *Cottager's Calendar*, published at this office, is not too much advanced for the use of young children, but the information conveyed should be supplemented by oral instruction of an elementary kind, not found in that useful little work. The teacher must therefore have some knowledge of gardening, and have the gift of making the children interested in the various operations, which is not a difficult matter; for no book alone will succeed in doing that. No book will teach a child how to prepare a seed-bed, draw a seed-drill, or lift a young plant and transplant it to a nurse-bed, or how to repot a plant. The thing to be done must be demonstrated by the teacher, then the lesson is at once grasped by the children. As a general rule, fine seeds, such as those of Celery, Cauliflower, Lettuce, Cabbage, Radish, the seeds of herbs, and those of the size of dust-shot, may be broadcasted on the surface and raked in, or put into drills made $\frac{1}{4}$ -inch deep or less, the latter being the better method. This applies also to flower-seeds of small size. Peas and Beans need drills 3 inches deep in close soils, and 4 inches in light or sandy ones. Spinach, Carrots, Parsnips, Onions, may be sown in those drawn 1 inch or less deep. Seeds sown in flower-pots and seed-pans are sown at various depths; the finest, such as *Lobelia*, *Nicotiana*, *Calecolaria*, &c., must be scattered evenly on a smooth, level, firm surface an hour after the soil has received a good application of water. Such seeds must not be covered with soil or sand, but kept dark with a tile or bit of slate till germination has taken place. Seeds slightly larger may be covered with very fine mould to a thickness equal to their own, and so on. Lupins, *Ricinus* (Castor Oil), and the like should be put $\frac{3}{4}$ -inch under the surface.

SOIL FOR POTTING SOUVENIR DE LA MALMAISON CARNATIONS: S. P. As a means of lightening very adhesive loams, peat is useful, but not necessary; broken-up plaster, road grit, or sand, answering the same purpose.

VIOLETS DISEASED: Y. X. The plants are attacked by a fungus known as *Puccinia Viola*. If the condition is at all common in your stock, it will be best to burn it, and procure fresh plants. The disease spreads from one Violet plant to another, but will not be likely to attack other species of plants in the same frame.

WATER-GLASS: M. R. This is another name for soluble glass, a silicate of potassium, found in commerce as a white, glassy mass, a stony powder, or dissolved as a viscous liquid. It can be bought at some chemists' shop. An explicit pamphlet has been issued by the Leicestershire Egg Preserving Depot, price 4½d.

COMMUNICATIONS RECEIVED.—W. G. H.—F. M., Clevedon, next week—*Reliquie Dewevreane*—Brussels—Mrs. E. S. Photographs, with thanks—A. C. B. Photograph, with many thanks—C. D., Heaton Mersey, many thanks—A. B.—*La Mortola*, with photograph, with many thanks—Signor Beccari, Florence—*Ignoramus*—W. H. W.—J. T. L.—F. W. B.—J. Brech & Sons, Boston, U.S.A.—J. M.—E. W. C.—W. M.—*Pomona*—G. L.—T. H. B.—W. J. C.—W. E. B.—W. G.—J. M.—N. E.—F. T. M.—W. H. D.—W. H.—J. J.—C. G. Nunn—H. F. W.—B. B., Exeter—T. H. S.—photo received with thanks—F. W. B.—A. D.—S. W. F.

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



AGAVE RECURVATA, SANTA BARBARA, CALIFORNIA.



THE

Gardeners' Chronicle

No. 789.—SATURDAY, FEB. 8, 1902.

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DECORATING THE DINNER-TABLE.

WE are apt to plume ourselves in this connection upon our artistic notions and our well-dressed tables are sometimes thought of as ample proof of a highly civilised state of existence. We can, however, hardly consider this custom of decking our feasts and banquets as exclusively a modern one. The blossom-decked festivals of ancient Rome and Pompeii have been frequently referred to by historians, and if the story painted upon sarcophagus and temple wall in Egypt is to be relied on, we may readily believe that a much older civilisation than either of these was in the habit not only of adorning its religious observances, but also the mundane functions of eating and drinking were not carried out without the beautifying influence and presence of flowers.

Apart from considerations of the ancient or modern use of flowers at table, there occurs the thought of a time in Britain, as in other lands, "when wild in woods the noble savage ran." One can imagine a

nobler specimen than the other savages noting and taking an interest in the beauty surrounding him, as he ate his handful of roots, or tore from the bone the flesh he may have been consuming. At any rate, it always appears to me a tribute to a really primitive state of being, this plan of having flowers or plants arranged with more or less effect upon the table at which our meals are partaken. It is the same influence, that prompts people to carry food a long distance that they may eat and drink as did their ancestors of long ago, untrammelled by the four walls of a room, and with nothing except perhaps a few branches between them and the sky above.

It is a far cry from the days of the aboriginal Briton to the present time, but a few remarks upon this subject of decoration may not be out of place; there is, I fear, room for improvement in our methods. A man may be the happy possessor of ingenuity in carrying out original ideas, and yet these qualities will perhaps be the means of leading him to the perpetration of a design both incongruous and inartistic. Ingenuity has provided miniature arches, bridges and certain appliances in which wire plays an important part. For each and all of these we may be grateful or not. It depends so much upon the size of table to be dealt with, its accessories, and the style of dinner to be served upon it.

The peripatetic waiter will gaze with anything but admiration upon a daintily appointed table, and will tell you with something approaching derision for the light and elegant effect, at which you have aimed. "If it only had a square of silk in the centre it would look all right." At which you are tempted to ask if he would not like a mirror with a few china ducks "swimming" upon it. Most likely he will tell you "they would look very pretty," and in despair you leave him. Having seen these pretty ducks swimming on looking-glasses, and having no love for them, or the much-vaunted coloured centre-pieces of silk, I can only say that nothing short of compulsion shall ever make me use either one or the other for table decoration. In the exhibition-tent there is a growing tendency to make a special feature of table decorations, and there is no question that they excite a great amount of interest, and in large exhibitions, where the work is fairly well done and competition keen, it is usually a matter of some difficulty, owing to the number of spectators, to get a sufficiently comprehensive view of any of the designs to form a proper judgment. Even here it is possible to see some peculiar ideas carried out by exhibitors, and I shall not readily forget a rather flagrant case in which a well-known gardener and myself awarded the first prize to a table simply and yet artistically adorned with autumn-tinted leaves and ripe berries, in preference to one upon which Orchids in profusion had been heaped. Cypripedium insigne muddled up with splendid Cattleyas; above all, a bright scarlet lampshade—and I bore the brunt of the language bestowed on us by the disappointed one. The decorator who works in the daylight of an ordinary show has opportunities denied the one, the result of whose work will only be shown by artificial light. Here blue is an almost impossible colour, but in the daytime some charming effects may be

obtained by the use of blue flowers. In the case of yellow, none but the richest and deepest ought to be used for night-time; yet the pale varieties of the Iceland Poppy are used in the daylight with delightful results.

Those who have had something more than a nodding acquaintance with the work of high-class London florists, will know that their designs are not made to fit in with the appointments of the table, but *vice versa*. Everything must give way for their concocted arrangements. But those who have frequently less material to work with, viz., those private individuals to whose lot falls the decoration of the dinner-table, must more often than not make their ideas and devices fit in with and be subservient to the "laying" of the table.

There is great difficulty in giving advice and stating general rules for guidance in this matter. I have seen a book filled with highly-coloured but impossible designs for the dinner-table. The combinations of cut flowers were, to speak mildly, remarkable, and such as I should never dare to use.

Tables not only differ in their appointments, they differ in size. It has fallen to my lot to dress them in several districts, and in one case I remember there was scarcely room for the smallest amount of tracing, owing to the narrow table used. In others there is greater width, and upon these the best and most telling effects can be produced.

I am not going to give more than a general outline of the various methods of procedure. Minute instructions are almost sure to mislead in this matter. A sense of proportion is a great requisite. Most people, if they had not seen, could imagine, the noble display likely to be produced by a combination of Arums and Poinsettias; yet this would be out of place upon a small table, though suitable enough where from twenty to thirty are dining together. The most frequently-used articles for tracery and festooning we find are Smilax, Lygodium scandens, Selaginella, and Asparagus and Fern fronds. These are, doubtless, all suitable enough so long as small or smallish flowers are used in conjunction. It is when we come to use larger flowers, such as Chrysanthemums, Camellias, and so on, that some heavier material must be looked for, and used in lesser quantity. Malmaison Carnations look well with foliage of the border varieties, or Pinks. Roses with their own foliage, than which nothing becomes them better. Rêve d'Or produces charming leaves and shoots for this purpose, as does also Aglaia. The blooms of the common monthly Rose are almost perfect for the table, being amply supplied with buds, and of a colour which comes out well under artificial light. Charming dancing Daffodils must not be forgotten, but eschew Polyanthus Narcissi, which are too strongly scented—a drawback this to which all flowers of heavy odour are subject. Scarcely any of the Lilies are suitable, for this reason.

Amongst Orchids, Cattleyas, Lælias, Dendrobiums, Odontoglossums, and Calanthes, especially the two last, are worthy of being set up, each of them making for lightness and elegance. Cattleyas should be sparingly used, and it is to be supposed there are not a very large number of places where they are likely to be used in great profusion.

In conclusion, let me offer a few words in favour of the many lovely things we are able to produce outside, which when carefully treated give a refined and artistic finish to any table. Poppies, Aquilegias, Clematis, Sweet Peas, Anemone japonica, both white and rose-coloured; many Roses, and numberless inhabitants of the hardy herbaceous and half-hardy world. The use of plants is, by the rules of latter-day fashion, allowable both in conjunction with cut flowers and alone. There is a vast wealth of material in this connection which it is scarcely necessary to enumerate individually, *Draenas*, *Crotons* (*Codiaeums*), *Panax*, *Jacarandas*; various rush-like plants such as *Carex* and *Cyperus alternifolius*, the *Pandanuses* and *Aralias*, besides *Asparagus*, and many Ferns. These are all valuable in some way or other, and may be used in carrying out various designs, heightening the effect, or giving lightness to the floral part of many an arrangement upon the dinner-table. *J. W.*

THE RAINFALL AT ROTHAMSTED IN 1901.

ACCORDING to the rain-gauge at the Rothamsted Experimental Station, which was constructed forty-nine years ago, and is 1-1000th of an acre in area, stands 2 feet above the surface of the ground, and is about 420 feet above the sea-level, we find that the rainfall for the year 1901, recently ended, amounted to 23 $\frac{1}{2}$ inches, which is about 5 $\frac{1}{2}$ inches below the average record for this district, extending over a period of forty years.

The following table shows the rainfall of each month for the past year at Rothamsted, Hertfordshire, with the average amount of rainfall for each month of the previous forty years, and the difference of 1901 above or below the average:—

Rainfall at Rothamsted for each Month of the Year 1901, and the Average and Total Yearly Rainfall.

| Months. | Rainfall, 1901. | Average Rainfall of Forty Years. | 1901. Above or Below the Average.* |
|------------------|-----------------|----------------------------------|------------------------------------|
| | Inches. | Inches. | Inches. |
| January | 1.18 | 2.46 | -1.28 |
| February | 1.26 | 1.74 | -0.48 |
| March... .. | 2.56 | 1.73 | +0.83 |
| April | 2.51 | 1.97 | +0.54 |
| May | 1.81 | 2.34 | -0.53 |
| June | 0.84 | 2.42 | -1.58 |
| July | 2.44 | 2.72 | -0.28 |
| August | 2.00 | 2.60 | -0.60 |
| September | 1.35 | 2.60 | -1.25 |
| October | 2.02 | 3.20 | -1.18 |
| November | 1.05 | 2.65 | -1.60 |
| December | 4.13 | 2.20 | +1.93 |
| Yearly total ... | 23.15 | 28.63 | -5.48 |

* The sign (—) signifies below the average, and the sign (+) above the average.

The above table shows that the yearly total of rain, with melted snow and frost, for the past year was 23.15 inches, against an average of 28.65 inches for the previous forty years, showing a deficiency in the twelve months of nearly 5 $\frac{1}{2}$ inches. There were but three months in the year—namely, March, April, and December—when the rainfall exceeded the average record, consequently there were nine months of deficiency. This is the smallest yearly rainfall since 1898, when 20 $\frac{1}{2}$ inches only were measured.

In order to understand what this deficiency of 5 $\frac{1}{2}$ inches of rain means to our natural springs of water and to vegetation, it may be

explained that this deficiency represents a total of 553 tons of water, equal to 124,432 galls. on each acre of land; accordingly our well-springs and other supplies of water show a falling-off which can easily be accounted for. A well at the Rothamsted Laboratory, from which no water is drawn, but which is measured month by month, to determine the rise or fall of the springs, in January of last year recorded a depth of 2 feet 11 inches of water; this gradually rose to a maximum depth of 3 feet 11 inches in April. Since that date the water has been decreasing, and at the beginning of December, 1901, there were but 11 $\frac{1}{2}$ inches of water in the well. The large rainfall of the month of December will probably cause another rise of the springs. *J. J. Willis, Harpenden.*

DENDROBIUM TAURINUM.

ORIGINALLY discovered by Cuming in the Philippine Islands, this singular-looking species was flowered for the first time under cultiva-

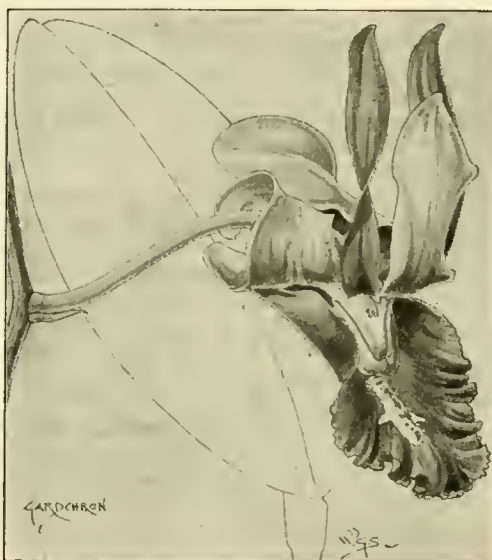


FIG. 30.—DENDROBIUM TAURINUM.

tion in Loddiges' nursery in 1842, and from that time until a few years ago the small importations made of it always came from the Philippines. But among the plants collected in Amboina by the late David Burke, for Messrs. Jas. Veitch & Sons, were a few specimens of a plant identical with the typical *D. taurinum* in most respects, though differing much in the appearance of its brown tinted yellow flowers, and which was named *D. taurinum amboinense*. Last year Messrs. Hugh Low & Co. still further added to the known area of geographical distribution of the species by flowering plants imported from New Guinea, the flowers of which were in every respect similar to the Philippine species, a circumstance all the more singular because the Amboina plant, a much nearer neighbour of it than the original Philippine form, is so dissimilar in colour, and some other details, as to entail a great deal of consideration, as to whether it might not better be considered a distinct species.

Our illustration (fig. 30) represents a flower of Messrs. Hugh Low & Co.'s New Guinea form. The sepals and petals were whitish, the petals tinted with rose colour; the lip pale rose, with purplish markings at the base.

All the forms of *D. taurinum* are tall-growing, the pseudo-bulbs sometimes being 9 feet in height. Messrs. Low's plants were about 3 ft., but probably the dwarfest were selected for sending to this country. The inflorescence is borne on upright spikes, and the flowers have sufficient resemblance to the head of a bull to warrant the name given to it. It should be grown with *Dendrobium Phalenopsis*, *D. superbiens*, and others of that class in a warm house, and should be rested with a restricted supply of water in the intermediate-house.

FOREIGN CORRESPONDENCE.

GARDENERS' PROSPECTS IN THE UNITED STATES OF AMERICA.

I NOTICE in your issue of January 11, 1902, a communication from A. Harding, Villa Nova, Pa., setting forth in rather glowing colours the opportunity British gardeners have in this country, as he sees it. Mr. Harding speaks from an experience of eight months, and is naturally enthusiastic when he compares his present condition with those that ordinarily obtain in the English gardens. For nearly twenty years I have been in daily contact with the gardeners of New England and New York, and seldom a day passes without one or more applying to me for positions, therefore I feel that my experience warrants me in speaking as to the facts. The British and German gardeners, because of the knowledge they possess through a more systematic training in the business than is readily obtainable in this country, usually have the preference when positions are offered. There are not many American gardeners. The wages Mr. Harding mentions are correct, and in some instances even more money is paid. The trouble, however, is that there are now more gardeners, head and working, in America than there are positions for. A call round at the leading seed stores in any of the principal cities will, I think, demonstrate this statement to be beyond question. The business with which I am associated makes, at a considerable expense, a specialty of supplying horticultural and agricultural help; and we have to-day on our books the names of more capable men seeking positions than we expect to be able to place this season; while there will, undoubtedly, be added to this already too big list the usual number of "floaters" that come to the top every spring when the season's work opens.

The nurseries in this country are run on an entirely different system from what they are on your side; and usually it is only for a couple of months in the spring and another in the fall that a gardener, out of regular employment, can hope to find work in them. The employing of Poles, mentioned by Mr. Harding, is not per force, but by preference, because of the fact that Poles and Italians will work for less remuneration than almost any nationality that seeks refuge in the United States. Their 5s. or 6s. a day may seem a large sum when compared to the nursery labourers who are working at home for 15s. to 18s. a week, but the English nursery labourer should remember that he has employment for twelve months of the year, and that his 2s. has as great a purchasing power as our dollar, so far as necessities are concerned; while the nursery-labourer in this country, north and west of Pennsylvania, rarely finds employment for more than eight months of the twelve.

While it is not my purpose to discourage honest, capable, and ambitious gardeners and

florists from coming to the United States, it may not be out of place for them to know that this is not exactly a land flowing with milk and honey, and that situations are not always to be had for the asking. Perhaps it is not too much to say that more scope is afforded here, and young men of ability have more consideration shown them than they usually receive from English employers. Nevertheless, they have in many things to serve a second apprenticeship, and during that time receive only "apprentices' pay." When he eventually applies for the higher position, he finds, as Mr. Harding puts it, "over a dozen established and capable applicants in compe-

Cypripedium niveum and *C. insigne* Sanderæ, and on flowering this year was shown at the Royal Horticultural Society's meeting on January 28, when it was unanimously voted a First-class Certificate. The upper sepal is white with a yellow tinge over the basal half, which is also dotted with minute purple spots. The petals are cream coloured, evenly dotted with purple; lip pale primrose; staminode pale yellow, with a small green boss in the centre. The foliage is broader than that of *C. insigne*, greyish-green with dark green reticulation.

It may be assumed that this cross has been made before, and the seeds proved non-

STANDARD TREES OF PEACHES AND NECTARINES.

My first ideas on the above subject were obtained in 1862. At that time I was employed in a garden not far from Sudbury Hall in Derbyshire, and occasionally I called there to see the gardens. The head gardener at that time was a Mr. Dick, a very gentlemanly, intelligent man. For some time previous to his taking charge, the gardens had been practically closed. Amongst the fruit-houses were two roomy lean-to Peach-houses. The trellises for training the trees upon were curvilinear at the front, and on the upper portion of the back wall. Most of your readers will recall houses of this description. The natural soil of the district was of a moist loamy character, and as the trees on the front trellises had free access to the outside borders they grew very freely. I was informed that a few years previous to the time mentioned the trees generally had grown nearly wild, not having been pruned or tied down for some two or three years. In the case of those on the front trellises it was decided not to attempt to let them down to the trellis again. The shoots were thinned out, leaving the stoutest and best-placed ones, which thus formed a series of small bushes growing upright from the main branches. The first year a nice crop of good fruit was secured, and when I saw them they were producing a capital crop. I left that district at the end of 1863, so cannot say how long they continued to do well.

My next observation bearing upon this subject was in the case of a span-roofed house, which had been used previously for the cultivation of *Ericas* and other hard-wooded greenhouse plants. The house in question ran from east to west, hence the fall of the roof-glass was to the north and south. For about two-thirds of the distance up each side a trellis was fixed some 14 inches from the glass. The side facing north was planted with dessert Plums, and the one facing south with Peaches and Nectarines. Along the centre some good-sized trees of the latter, hitherto grown in pots, were planted out. For a few years the whole continued to afford fairly good crops of useful fruit, but they had to be cleared out after a time, as the house was too narrow and low for them. I ought to say that in wet, sunless seasons the Plums did not prove satisfactory. This was a case like the former, where the gardener had to make the most of the means at hand for the time being.

THE STYLE OF HOUSE FOR THE PURPOSE.

Were I called upon to erect a house or houses for the supply of late summer and autumn Peaches, I should erect them on the lines of the one last described; but the houses would run from north to south, and the interior space would be more roomy. Seeing that it is nearly impossible to permanently fill an ordinary lean-to or span-roofed house with standard Peaches and Nectarines and get regular crops of good fruit, I should propose to combine trellis-trained trees and free-growing standards in the same house. My reason for doing this would not be a cultural fad, but a firm belief that it would be profitable in every way to do so. A house of the kind I mention should be 30 feet in width; its length would depend upon the needs and wishes of the builder; if for a private establishment, one, say 100 ft. long would supply abundance of good fruit for most, if not all, families, ripening, say from the beginning of August to the end of September, after which time, in northern districts especially, Peaches are not much valued on the dessert-table. Of



FIG. 31.—CYPRIPEDIUM × VENUS, OAKWOOD VARIETY.

tion," which actually reduces the conditions to those prevailing in your country, except perhaps in the matter of pay, and this, as above suggested, is to a material extent offset by the extra expense of living and temptations to spend money naturally incident to the country. Archibald Smith, Boston, Mass.

CYPRIPEDIUM × VENUS, OAKWOOD VARIETY.

THE subject of our illustration (fig. 31) must be added to the list of really beautiful and distinct hybrid Orchids raised by Norman C. Cookson, Esq., of Oakwood, Wylam-on-Tyne, in whose garden so many fine garden-hybrids have originated. It was obtained by crossing

effective; for it is recorded in the *Gardeners' Chronicle*, 1895, i., p. 200, though no raiser's name is given. Whatever may have been the outcome of that record, certainly nothing so beautiful in its way as that shown by Mr. Cookson has been exhibited. The cross between *C. niveum* and ordinary *C. insigne* is known as *C. × niveo-insigne*; and *C. × Muriel* Hollington was said to be of similar parentage, but doubts are expressed on that point.

Mr. Cookson's success in securing the best in its class out of *C. insigne* Sanderæ is all the more gratifying, as that fine yellow form of *C. insigne* does not generally produce good results. Probably its chaste beauty is nullified by crossing with coloured species, but the other parent in this case being white it is enhanced.

course, in late seasons one or two of the kinds named below would keep until the middle of October if required.

Beyond giving a few dimensions of the house I allude to, there is no need to go into further particulars. Any good horticultural builder would erect it. I mentioned 30 feet as the width, the height of the ridge should be 12 feet 6 inches from ground level, with 3 feet 3 inches for the eaves; 2 feet of the latter should consist of moveable lights, hung from their centres, so as to open inwards and outwards. By this method a current of fresh air is carried upwards in the space betwixt the glass and the trellis-trained trees. This is an important matter in late Peach-houses, especially now-a-days when the plane of their roofs is little better than a sheet of glass. On each side of the ridge there should be continuous moveable lights, say, not less than 2 feet 6 inches in width. If these were made in 9 feet lengths, and being so that they could be easily removed each year when the fruit was picked, and the wood properly ripened, it would be an advantage in several ways. One advantage would be, that it would prevent the house being converted into a general plant-store in the winter. Many so-called late Peach-houses are gradually turned into second early ones through being used for this purpose when the trees should be completely at rest. Instead of the usual door at each end under the ridge, I would have two doors at one end, if not at both. The object in this is to facilitate work when new soil is required, &c., by giving free access to wheelbarrows, garden-engines, and hand-barrows.

Owing to the standard trees being planted along the centre of the house, two small paths would be required. The doors suggested should be opposite the paths. It would be necessary to have not less than two lengths of 4-inch hot-water pipes up each side of the house to exclude frosts at night when the trees are in blossom; and also what is of equal effect, if not greater importance, in dull, sunless seasons, viz., dry the atmosphere sufficiently in the daytime to liberate the pollen-grains, and ensure a good set.

Beyond saying that the walls which carry the eaves should have well-arranged openings quite up to the ground-level so as to give free access outwards to the roots from the trellis-trained trees, I do not propose to go further to describe the details of border formation. These have been recently discussed in the *Gardeners' Chronicle* by fully competent men.

PLANTING THE TREES.

Beginning with standards, I would suggest that twelve trees be put in a house of the length named. This would give each tree about 8 feet 6 inches of space lengthways, and a little more crossways, in the space in centre of the house. Two parallel brick-on-edge walls running the whole length of the house, say from 3 to 4 feet from the centre, should be put down. These walls might be carried, say 1 foot below ground-level, and rise an equal height above it. Cross-walls of the same depth and height, and 8 feet 6 inches apart, would give a separate compartment for each standard tree. I am quite sure this extra expense would in the long run be amply repaid by the greater cultural advantages afforded. When planting, be sure and choose strong, healthy maiden trees on stout 5-foot stems. It will require fully as much care and attention to form the base of a good standard as that of a trellis-trained tree, though I would by no means suggest that much annual pruning is advisable. After the first year's growth, each tree would carry, say, two

dozen fair fruits. I know some gardeners speak of more fruits having been proportionately produced; but seeing that a Peach under, say, 5 ounces in weight is but an apology for a good fruit, I would dissuade growers from overcropping, at the outset at any rate. As is well known, it is the pulp that is eaten, not the stones, and it is impossible to have an undue quantity of the latter well clothed with the former. When fully grown, each standard would give not fewer than 100 Peaches, with perhaps 120 in the case of Nectarines. My selection of varieties of Peaches would be Barrington, Bellegarde, Violette Hâtive, Crimson Galande, Goshawk, Prince of Wales, Sea Eagle, and Walburton Admirable; and of Nectarines, Balgowan, Lord Napier, and Pineapple.

The trellises for training the trees upon along each side should run about 12 feet up the roofs from eaves, and be not less than 18 inches from the glass. Here I would plant six trees on each side, thus allowing a space of about 16 feet 6 inches for each tree. Nectarines should be kept to themselves.

My selection of varieties for trellis trees is Condor, A'bee, Grosse Mignonne, Nectarine Peach; Dymond, Violette Hâtive, Princess of Wales Peaches; and Early Rivers, Balgowan, Violette Hâtive, and Stanwick Elruge Nectarines.

Taking one fruit from each square foot of trellis would give 1,200 fruits from each side of the house, making with fruit from standards considerably over 3,000 fruits annually, which most practical fruit-growers will agree is a fair quantity. I need hardly mention that until the trees come into full bearing, the vacant space might be occupied with Tomatos, or some other crop. *H. J. C., Grimston Gardens, Tadcaster.*

CULTURAL MEMORANDUM.

DAPHNE ODORA.

SOME few individuals of this old and fragrant species which flowers about Christmas, should be found in every greenhouse. The plant is generally grafted on stocks of *D. laureola* in March, though I have been fairly successful in growing them on their own roots by putting in during September slips 3 ins. long, with a heel of older wood, in a mixture of sandy peat and loam, in thumb-pots. The slips should be placed against the side of the pot, afforded water, and put under a bell-glass in the greenhouse. They may take longer to form roots than in heat, but the plants are stronger, and not so liable to decay; moreover, the plants are longer-lived on their own roots than grafted plants. At Bieton the plant is used to cover a greenhouse back wall, where they succeed admirably, not being crowded with other plants; and for this purpose grafted plants are preferable, as they grow stronger. Nice little bushy specimens can be grown in 7-inch pots, in loam and peat in equal proportions, with enough silver-sand and a small quantity of powdered brick-bat as will give porosity, potting firmly. Frequent repotting should be avoided so long as a plant is healthy.

Water must be applied only when it is wanted, as ill-health quickly follows excess of moisture at the root; and manures should be avoided. In the month of July, plants in pots are the better for being placed outdoors, and gradually inured to full sunshine, plunged in a bed of coal-ashes. In Devon and Cornwall *Daphne odora* is hardy, and except in very severe winters, they flower freely from the

new year onwards. Out-of-doors, a S. or S.E. wall should be selected for the plants, and one fairly sheltered from cutting winds, and the drainage should be good; the same kind of soil as that used for *Daphnes* in pots, but in a more lumpy state. At Bieton, some litter or bracken is placed around the stems of the plants when severe frosts threaten, and put a mat over them if they are in flower. *J. Mayne, Bieton.* [Our correspondent kindly sent a few flower-heads, taken from plants that had been out-of-doors for five years, the variety being the pink-flowered one. This and the white-flowered variety are very sweet-scented. Ed.]

NITROGENOUS MANURES FOR PEAS.

IN such discussions as occurred in your last issue, it is well to take the entire horizon into consideration, when science and practice will always march hand in hand and pull together, and redress the balance over the assumption that "practice and results have the pull over theory," as stated by Mr. James Baxter. As the more important part of the problem, I prefer to consider Mr. Manning's point of view first, who tells us he sees no very decided benefit in supplying nitrate of soda to Peas, except the earlier ones. This is as it should be, for as nitrification in the soil sets up in proportion to the action of the sun's heat, summer and later crops obtaining the full spell of the power of our great orb, are well provided from natural nitrification in the soil. In this connection, I should like to offer another illustration bearing on the subject. In dry, warm seasons, we have observed that fruit crops do not colour so well as when a fair amount of rain falls. Rain reduces summer heat of the soil and diminishes nitrification. When this occurs fairly, fruit (especially Apples) will be highly coloured. When continuous drought occurs, the fruit will be green. Anyone wishing to experiment can do so for himself by intelligently assisting Nature, and copiously affording water, and syringing with water a portion of his trees in August and September, and comparing results with the other portion left to Nature unassisted.

Dry heat of the soil promotes nitrification, and thus continued growth of fruit occurs, instead of the maturity shown in the development of colour which is promoted by rain and its effects of cooling the soil. Thus, in general, the application of nitrate of soda has its most striking effects in spring on all kinds of crops, natural nitrification being yet little developed so early. The interesting lessons foreseen by Mr. Manning, and which, so says an editorial parenthesis, will be gladly received, will therefore be surely evolved on these lines from the various trials to be made by others as suggested by Mr. Manning. When we thus see results from joining theory to practice, we come to Mr. Baxter's case, who finds a layer of manure (presumably dung), placed at the bottom of a trench, very useful. Naturally so, in a dry season; but, of course, not for its manurial character, but as he says, for a moister bed for the roots, which he supplements by moistening the Pea-haulm overhead, being also found beneficial. When we shall have acquired the habit to irrigate, a goodly supply of water will not be considered any longer so unnecessary; but its sufficiency at the root of Peas will reduce the usefulness of manure at the bottom of trenches for Peas, as the latter thrive remarkably with water only for the later crops, and are quite independent of dung, as natural nitrification makes up for it in the case of all Leguminous plants.

Irrigation in agriculture dates from hoary antiquity, and at the present time one-seventh part of the entire population of our globe, or five times the population of these isles, subsist almost entirely by production, dependent upon

easy one, and thus proceed from the simple to more complex environment, so that a scientific system be evolved in time out of the learning of the A, B, C, to start from the present day. H. H. Ruschen, Sidcup, Kent.

by the Floral Committee. It is a perennial greenhouse shrub, of bushy habit, a foot or less in height as shown, growing in 6-inch and 7-inch pots. The leaves are sessile, ovate-lanceolate, deep green, rather glossy, $1\frac{1}{2}$ inch across at the base; flowers rather more than $\frac{1}{2}$ -inch across, produced in terminal racemes, purple, or violet-purple in colour, with prominent yellow anthers. The plants shown by Messrs. Veitch had been cultivated in a greenhouse, having an intermediate temperature. *E. affine* was illustrated in the *Gard. Chron.*, May 10, 1884, and *E. macranthum*, Mar. 17, 1894.

COLONIAL NOTES.

AN INTERESTING GATHERING AT BARBADOS.

THIS, the fourth meeting of the Agricultural Conference, has just taken place at Barbados, and we have returned to our respective homes after what may be looked upon as a most profitable and pleasant time. Among the representatives from the West Indian Colonies were nine Kew men, and our old friend, Mr. J. H. Hart, of the Botanical Department in the flourishing island of Trinidad. The Kew men present were:—Messrs. R. Ward, of British Guiana; H. Powell, of St. Vincent; J. Jones and D. Tannock, of Dominica; Wm. Lunt, from St. Kitts; W. N. Sands, of Antigua; A. J. Jordan, of Montserrat; H. Miller, of Tobago; and W. E. Broadway, of Grenada. We missed one colleague, Mr. J. C. Moore, the Curator of the Botanic Station at St. Lucia, who unfortunately was prevented from putting in an appearance on account of his island being under quarantine. Possibly this is the only part of the tropics where so many Kew men annually meet. Situated as we are thousands of miles away from home, and among, relatively, few of one's kinsfolk, it is difficult to describe how we appreciate the opportunity of meeting each other. We, who have been so long from the old country, hear and learn much from the newer men, as well as from those who have been privileged to visit Britain on their well-deserved holiday. The stay at Barbados extended beyond the usual time by some forty-eight hours, owing to the Royal Mail steamer *Elbe* from England being two days late, having experienced bad weather. These annual Conferences are held under the presidency of Dr. Morris, C.M.G., &c., the Imperial Commissioner of Agriculture for the West Indies, and it is through his invitation and influence that Kew men and others are enabled thus to foregather for business and pleasure. Barbados, an old British colony, is a strikingly busy place compared with Grenada. One of its characteristics is the delicious flying-fish, which, when alive, skim over the open sea and resemble a lot of birds flying together. There are also edible sea-urchins. W. E. Broadway, Grenada, January 10, 1902.

WEST INDIAN BULLETIN.

The last part received contains a full report of the proceedings at the West Indian Agricultural Conference, 1902, held at Barbados under the presidency of Dr. Morris. The zeal and energy of this gentleman appear to be having good results. Dr. Morris still holds out the hope that a Sugar-cane will be developed which will yield 40 to 50 per cent. more sugar than any now in cultivation. Remembering what was accomplished with the Sugar-beet by the late Henry de Vilmorin, and his father before him, there is good ground for the belief that similar results may accrue in the case of the Sugar-cane. The Presidential address is very suggestive and hopeful. Next year, perhaps, the Conference will be held in one of the other islands.



FIG. 32.—EXACUM FORBESII: GREENHOUSE SHRUB; FLOWERS PURPLE.

EXACUM FORBESII.

OUR illustration (fig. 32) of this new species from Socotra, was obtained from plants shown by Messrs. James Veitch & Sons, Royal Exotic Nursery, Chelsea, at a meeting of the Royal Horticultural Society on January 14, when the novelty was recommended an Award of Merit

systematic irrigation, not a few million lives being thus maintained in British India. It seems a good broad hint to this nation to apply irrigation at home, which modern habit of thought expects of intelligence. Especially should rain-water be stored individually, so to have a resource on the spot wherever physical configuration renders the problem an

The Week's Work.

THE ORCHID HOUSES.

By W. P. BOUND, Gardener to J. COLMAN, Esq., Gatton Park, Reigate.

The removal of the back pseudo-bulbs.—I would refer to the article on p. 409 in *Gardeners' Chronicle* for December 7 last, on the removal of the leading growth of Orchids. I consider this article gives us the one and only method of checking the great loss of plants that has been going on since Orchids have been imported. The species worthy of propagation can be found; but the others which have been allowed to remain in the same state as when imported, i.e., with all the old pseudo-bulbs to rob the leads of nutriment, are gone altogether in a great many cases, and others are following them. Nothing is more charming than a specimen Orchid, but it is not the number of pseudo-bulbs which a plant possesses, but rather the number of its leads. There is nothing to be gained by leaving a string of perhaps 8 to 12 pseudo-bulbs behind the lead, but if they are allowed to remain they make the lead weak continually and general decay sets in. My advice is to sever all the back pseudo-bulbs excepting three or four immediately behind the lead, especially in the case of *Laelias* and *Cattleyas*; then, when the plants are potted, the leads can be placed together in the case of specimens, and make a much neater plant, and generally improve the health of the plants.

Cypripediums.—The present is a suitable time to re-pot or divide plants of *C. insigne* and its many forms, *C. Charlesworthi*, *C. Spicerianum* and the crosses derived from them. Few if any Orchids are more generally useful in apartments than *C. insigne*, or that will succeed amongst and under specimen Orchids. At Gatton Park this *Cypripedium* is grown beneath plants of *Cymbidiums*, in which way they do not take up much valuable room, and they afford a lot of flowers. The importations of recent years, especially of the *C. Montana*, have given gardeners many charming varieties of this fine old species, and lovers of flowers—apart from Orchid cultivators—should grow, in addition to the old form, such varieties as *C. insigne Sanderæ*, *C. i. Sanderianum*, *C. i. Dorothy*, *C. i. Fowlerianum*, *C. i. Harfield Hall var.*, and others. Specimen-making should be the one aim with all of the *C. i.* section, with the reservation that, as previously stated, after they have attained the desired dimensions and the soil has become exhausted, they should be divided, and the divisions grown on to specimen size. If this practice be followed from year to year, dividing a few and potting others, a stock of specimens can be readily kept up. Sometimes specimens are observed that have been grown in the same flower-pot for a number of years and still flower well; but still, if the plant had been divided there would have been twice the number of flowers obtained.

Potting soil.—*C. insigne* and its varieties grow well in turfy peat two-fifths, good fibry loam two-fifths, leaf-soil one-fifth, knocking out the finer particles of the loam if it be heavy. The ingredients should be mixed together and the pot well drained, and both pots and crocks quite clean. Let the potting be done rather firmly, filling the pots nearly to the rim, and insert a few clumps of living sphagnum-moss on the surface. The same kind of compost suits *C. Charlesworthi*, *C. Spicerianum*, but in potting these varieties the base of the growths should be kept a little higher than the rim or more drainage afforded, but do not make the surface convex. Water should be afforded carefully till the roots have seized upon the new compost. Frequent moistening of the stage and the sides of the pots, and the foliage on bright days, is of benefit to the plants. Any plants that have been divided should be shaded from the sun till the roots make a new start. The species and hybrids named need a temperature of not

less than 50°, considerable humidity in the air, and the avoidance of all closeness. A suitable house is one in which exotic Ferns and Palms are grown, or a moist greenhouse.

THE FLOWER GARDEN.

By R. DAVIDSON, Gardener to EARL CADOGAN, Culford Hall, Bury St. Edmunds.

Humea elegans.—Plants that are being grown on for out-of-door decoration of any kind should now be shifted into 9-inch pots in a soil consisting of turfy-loam and decayed manure, and a small quantity of charcoal and silver-sand, with sufficient drainage material. When the plants have begun to seize upon the new soil, afford them full sunlight and plenty of air on all favourable occasions by day, and apply water carefully. Plants of *Grevillea robusta* and *Eucalyptus Globulus* growing in pots which have become too tall for the greenhouse may be shifted into larger pots, and beyond affording them water more freely, they may be treated like *Humeas*. They will form excellent subjects for planting in the shrubberies or large beds in June.

Bedding Pelargoniums.—Those which have been placed in warm houses will have begun to grow freely, and may be potted forthwith singly in 60's in a mixture of turfy-loam and spent Mushroom-dung passed through a $\frac{3}{4}$ -inch sieve, with a small quantity of sand added. The pots used should be new or well washed, and no crocks will be necessary if some pieces of turfy-loam be placed over the bottom of the pots. Recourse is sometimes had to the "mossing," and replacing the plants in boxes, but I have not found this method very satisfactory.

Marguerites.—Rooted cuttings should be repotted into 48's after treatment similar to that of the *Pelargoniums*, but they must be removed to cold frames at a much earlier date, in order to induce a desirable sturdiness of growth.

Gazania splendens.—Young plants may be transferred from the cutting-boxes, and put 4 inches apart in other boxes in a mixture of loam, peat, decayed manure, and sand.

Dahlias.—If an increase of the number of plants is desired, old roots should now be put upon a bed having a bottom-heat of 75°, covering them up to the collar with light soil; syringe them twice daily, and as soon as the shoots produced have grown two joints in length, remove them by slipping them off, insert singly in small pots filled with sand and leaf-soil, and plunge in a close warm frame. When rooted, gradually inure to light and air, and repot as may be required.

Seeds.—A sowing of East Lothian Stock seed should be made at this date thinly in shallow pans or boxes filled with light soil, and place in a vinery at work till germination takes place, then remove to a cool house. In about a fortnight the plants may be pricked off singly into large 60's, using a rich loamy soil, place them on the border of such house, and apply water sparingly until growth begins, after which admit air freely, and at no time allow them to become dry at the root. Sow seeds of *Salvia patens*, and afford ordinary treatment under glass until the month of May. It usually happens that some of the old seeds decay in the winter, hence the need to sow. Seeds of *Salvia Scarlet Queen* should also be sown, and when pricked off the plants should be grown on in a warm house till midsummer. This plant associates well with autumn-flowering *Chrysanthemums*, or it may be planted in the borders.

FRUITS UNDER GLASS.

By JAMES WHYTOCK, Gardener to the DUKE OF BUCCLEUCH, Dalkeith.

The Earliest Peach-house.—The fruit being well set and of the size of horse-beans, a certain amount of thinning should be carried out, but leaving plenty for later thinning, early forced trees not always swelling off the

fruit regularly. As the swelling proceeds more fruits can be removed, the final thinning taking place when stoning is over. Everything possible should be done at the present time to help the swelling of the fruits, keeping a mean temperature of 60°, and 10° or 15° higher in the day-time; syringing twice daily with tepid water, and sprinkling a quick-acting manure on the border, which should be washed-in with tepid water. The Peach does not like a stuffy atmosphere, but as much fresh air as may be prudently admitted, avoiding cold draughts, which chill the small fruit and arrest growth. Disbudding should now receive attention, taking care to leave the bud at the base of the shoot. At this stage greenfly is often troublesome, and the trees should be syringed with quassia-water; and if the small points are curled with greenfly, dust them with tobacco-powder.

Early Vinery.—If the Vines are in flower, keep a mean temperature in the vinery of 65°, rising to 80° or higher in the daytime with sun-heat, damping the paths and wall surfaces so as to secure a moist air in the house. Much watchfulness day and night will be required on the part of those in charge of the houses, changing the air of the vinery by admitting it in small quantity by the upper sashes or ventilators during the warmest hours of the day—cold air injuring both foliage and berries when admitted in quantity. Attend to the tying-down of the young shoots, and keep them away from the glass. Allow two or three buds beyond the bunch to grow, stopping laterals back to one bud; proceed with the thinning of the berries as soon as the fruit is properly set, and apply a light sprinkling of vine-manure to the border, washing it into the soil with tepid water.

Second Vinery.—The vines in this vinery are following close upon the heels of those started a month earlier, and are developing their flowers. Let there be no haste to disbud, but first see which bunches are likely to be the best before making a choice. One shoot to one spur is enough to leave. The mean temperature should not go below 60°, or 5° more than this if the weather is moderate, and 70° to 75° by day. Tie the shoots to the wires with a long strand of matting at the first, and bring them bit by bit on alternate days towards the trellis. If the weather is bright and the air in the vinery inclined to be dry, damp down frequently. Vines, in order to produce ripe Grapes in the months of July and August, should now be started. Unless the weather is very cold, but little fire-heat will be required at the first to maintain a night temperature of 50°, and by day of 55° to 60° when weather is bright. Syringe the Vines in the early morning and early in the afternoon, damping the paths occasionally. If the weather is dull, one syringing in the morning is usually enough. Before starting the vinery the inside border should be examined, and if found to be dry, it should be afforded warm water mixed weakly with cow-house drainings, and afterwards a moderate sprinkling of bone-meal and vine-manure put on the surface together with two inches of fresh, turfy loam finely chopped.

PLANTS UNDER GLASS.

By J. C. TALLACK, Gardener to E. MILLER MUNDY, Esq., Shipley Hall, Derby.

Palms generally will now require their annual inspection as regards repotting and retubbing. I would like to suggest, however, that these accommodating plants are often subjected to too much root disturbance, and that while they are doing well, and show no signs of lessened vigour, they should be let alone, as over-potting may lead to the souring of the soil, and given the requisite shade and syringing during the summer, the small amount of root-space that they require is surprising. *Kentias*, *Arecas*, and, in fact, almost all the more useful *Palms* grown under glass, appear to enjoy a certain amount of confinement at the root, if other conditions are right, and to the decorator this is a great advantage. When

potting is necessary, however, the greatest care should be taken to provide good tough turfy peat and loam that will not soon decay; and good, but not an excessive amount of drainage, carefully placed, and leaving as much space as possible for the roots without elevating the crowns of the root above the rim. No new soil should be placed above the root-level. I would rather leave some roots exposed than bury any portion of the stems. In potting-on young plants, the smallest shifts should be given. A new Palm that has pleased me very much is *Kentia Sanderiana*; this has an Areca-like appearance, and promises to stand rough usage better than that popular species, *Areca lutescens*.

Eucharis.—While these are doing well, they may be left alone. Probably the best plants now to be found have occupied their pots for many years together without disturbance, except to replace the surface-soil, which is sure to get washed away. If, on the other hand, the soil has got into a bad condition, the plants must be shaken out and repotted, placing as many bulbs as possible in a pot, and potting them deeply. Pots over 12 inches in diameter are unsuitable for *Eucharis*, as the large body of soil required soon gets sour. February is a suitable month in which to repot, as then the roots are fairly active, and the temperature may be kept equable, there being no great amount of sun-heat. To keep *Eucharis* healthy and free from the mite, I prefer a cooler, more airy, and somewhat drier treatment overhead than that generally given. A free use of sand in the potting mixture, good loam and peat, are the essentials, with, of course, sufficient, but not over-abundant drainage.

Fuchsias.—Autumn-struck *Fuchsias* should now be repotted, old plants brought to the light, and any that are wanted to produce shoots for propagating purposes, after being slightly cut back, should be placed in a vinery at work; while those intended for growing on as specimens may be pruned severely into shape, and kept cool for some time, no water being afforded for several days after pruning.

Herbaceous Calceolarias.—These may be placed in their flowering pots, using sandy loam, enriched with decayed cow-manure in a dry state. Pot them with a moderate degree of firmness, and place in a house where the general conditions are cool and moist, with plenty of light, and where they get very little direct sunshine.

THE KITCHEN GARDEN.

By T. TURTON, Gr. to J. K. D. WINGFIELD DIGBY, Esq., Sherborne Castle, Dorset.

Ridging Ground for Potatoes.—Land intended for the main crop of Potatoes, and now becoming vacant, if at all retentive, may be got into good condition before the time arrives for planting, if ridging is done at once. This will allow the ground to be exposed for several weeks to frosts and other pulverising agencies, and effect a great saving in labour. Ridge the land at the necessary distances for planting Potatoes, which may be 2 feet 6 inches, except in cases of very strong growers, which may require 3 feet from row to row. Having nicked out the land at these distances with a spade, dig deeply with a full-length, flat-tined digging-fork by preference, between the nicked-out lines, throwing the soil up roughly into a sharp ridge. When planting-time arrives, the frost will have pulverised the sides of the ridges; then take a digging-fork, and level up the trenches to the proper depth to receive the sets. The tubers can be planted by one man to a line, and another man should follow with a digging-fork to cover the tubers with soil from the ridges. The land between the rows may be forked over directly afterwards or left until a more convenient time. If extra fine and clean-skinned tubers are desired, or should the land require such a dressing, cover the sets in the trenches with decayed leaf-mould and charred garden-refuse. This has been my practice in respect to the main crop of Potatoes for many years.

Onion Ground.—If this has not already been well prepared by heavy manuring and trenching, no time must be lost. Land on which the main crop of Peas was grown last year, and which in most cases would be followed with Savoys and other early winter crops, will now be vacant. Place at the bottom of the trench all rubbish in the way of leaves from the Savoys, and other refuse from the crops; but pull up and burn all big stumps. After turning in the top spit, put on a layer of dung, and another layer under the finishing spit, which should be left roughly thrown up, and so exposed to the action of the weather till the time arrives for preparing the surface for sowing.

Mushroom-house.—Where much fire-heat has to be employed to maintain the required temperature, this will necessitate frequent sprinkling of the beds, walls, and path with water through a fine-rose water-pot or syringe. Judgment and experience, however, are the great factors in successful Mushroom-growing, and the covering of beds which are exposed to fluctuating temperatures or dry atmospheres with clean soft hay not only prevents moisture evaporating, but reserves the heat in the beds. Watering beds whilst the Mushrooms are small is often fatal to them, and the aim should be to afford a good watering to beds after a crop has been gathered, then re-cover with fresh hay, and unless the bed is exhausted, another crop will soon result. Maintain a temperature of 55° by fire-heat, and keep floors and surfaces near to hot-water pipes well damped. Collect droppings for another bed in the Mushroom-house, always avoiding, if possible, those voided by horses fed with Carrots; and upon no account use the dung from horses which have recently received physic.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bietou, East Budleigh, Devonshire.

The Fig.—In this garden, near to the sea coast, we never find it necessary to protect Fig-trees, even in the most severe weather, and in localities where such protection is necessary, the covering should be used only during frosts. Do not permit the trees to accumulate too much wood. It is very essential that the sun and air should be able to penetrate freely among the branches, to thoroughly ripen the growths, and thus render the shoots less liable to be damaged by severe frost. Well ripened shoots of the Fig will withstand 12° to 16° of frost, but it is the continuance of hard frost for weeks together that does the mischief. Thinning of the shoots may be done in mild weather, and the remaining ones washed with a mixture of soft-soap and flowers-of-sulphur, made of the consistency of paint, which will kill any red-spider there may be upon them. Curtail the roofing space of the trees, and do not permit them to enter a rich, loose border, or they will make gross and unfruitful wood. Short-jointed wood is required, and for the production of this the border cannot well be too firm, as the best results are generally obtained from trees whose roots have worked under a road or garden path. Good loam, with about one-sixth of old mortar-rubble, well mixed together, is a good compost. Thorough drainage is necessary, and the planting is best done late in March. The old variety, Brown Turkey, is one of the hardiest, most reliable, and best-flavoured varieties for cultivation out-of-doors. If a wall is afforded the trees, it should be one facing south or south-west. In this county (Devon) standard and bush-trees of large dimensions are frequently seen laden with fruit during August and September, in warm positions sheltered from the north by buildings or evergreen hedges.

The Pear.—Any trees affected by the Mussel-scale, and that have been pruned, should be painted over with paraffin emulsion at once. We had two fan-trained trees on a west wall so badly infected that they made no growth. As a winter dressing, half-a-pint of paraffin

was put into a 4-gallon pail of nearly boiling water and thoroughly mixed together, and enough clay added as would make a thick paint. This was laid on over every part of the trees twice, after an interval of a week; the following season the trees grew away kindly, and have done so every year, no trace of scale having been noticed since. It is necessary to unfasten the trees before starting to paint, so that every part gets its share.

FRUIT CULTURE IN THE UNITED STATES.—

The subjoined figures and explanatory matter, from the Census Returns, refer to the State of

NEW HAMPSHIRE.

| Fruits. | Number of Trees. | | Bushels of Fruit. | |
|----------------------|------------------|-----------|-------------------|-----------|
| | 1900 | 1890 | 1899 | 1889 |
| Apples ... | 2,034,398 | 1,744,779 | 1,978,797 | 2,283,347 |
| Apriots ... | 141 | 191 | 2 | ... |
| Cherries ... | 6,700 | 7,164 | 1,183 | 504 |
| Peaches ... | 48,819 | 19,057 | 6,054 | 1,204 |
| Pears ... | 38,287 | 39,378 | 19,341 | 19,288 |
| Plums and Prunes ... | 18,137 | 10,151 | 4,942 | 842 |

The value of the fruit grown was 707,729 dols. In 1900, 94·8 per cent.; and in 1890, 95·8 per cent. of all the fruit trees in the State were Apple-trees. The increase in ten years was 16·6 per cent. Peaches flourish only in the south-eastern part of the State. The Cherry-trees decreased in the same period 6·5 per cent.; Pear-trees, 2·8 per cent.; while Plum and Prune-trees increased 78·7 per cent. As the quantity of fruit is determined largely by the nature of the season, which varies more or less from year to year in all the New England States, no valid comparisons can be made between the crops of 1889 and 1899. The former year was evidently more favourable to the Apple crop than was 1899, for although there was an increase in the number of trees, there was a decrease of 13·3 per cent. in the quantity of fruit reported. Cherry, Peach, Pear, and Plum trees, on the other hand, bore more abundantly in 1899 than in 1889. The area given over to small fruits in 1899 was 734 acres, and the value of the fruit grown was 116,830 dollars—an average of 159 dollars per acre. The acreage and production of berries were as follows:—Blackberries and Dewberries, 65 acres; Cranberries, 23; Currants, 27; Raspberries and Loganberries, 80; Strawberries, 307; Gooseberries, 5; and other small fruits, 227 acres, with a total produce of some 1,240,906 quarts. The produce was greatest with Strawberries, Raspberries, and Blackberries.

AGRICULTURAL STATISTICS, IRELAND.—A report has been published as a Government paper showing the extent in statute acres, and the amount of the crops grown in the several counties of Ireland in 1901. There is a decrease in acreage of over 20 per cent. in Wheat, of 0·5 in Oats, of 7·2 per cent. in Barley, and of 3·6 in Rye; in Potatoes of 2·9 per cent., in Turnips of 2·7 per cent. On the other hand, Mangel Wurzel, Flax, and Hay exhibit an increase. The amount of actual produce for Cereals and Potatoes shows an increase. Of the Potatoes grown over 66 per cent. are "Champions," and last season was very favourable, the produce per acre averaging 5·3 tons. A valuable diagram is given, showing the produce of Potatoes during each one of twenty years. It is very desirable that this should be correlated with similar tables showing the temperature, rainfall, and, if possible, the amount of sunshine.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions, or to return the unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and 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.

| | | |
|----------|----------|--|
| TUESDAY, | FEB. 11. | Royal Horticultural Society: Committees meet. Annual General Meeting of Fellows at 3 P.M. Horticultural Club at 5, Dinner at 6 P.M. |
| FRIDAY, | FEB. 14. | Annual Meeting of the Royal Gardeners' Orphan Fund. |

SALES FOR THE WEEK.

| | |
|----------------------|--|
| MONDAY, FEB. 10.— | Border Plants, Bulbs, &c., by Protheroe & Morris, at 12. |
| WEDNESDAY, FEB. 12.— | Azaleas, &c., by Protheroe & Morris, at 12.—Palms, &c., at Stevens' Rooms, 12.30.—Sale of Nursery, Bull Inn, Dartford, at 4, by Dann & Lucas. |
| THURSDAY, FEB. 13.— | Sale of Hollies and Rhododendrons, at the Eccleston Nurseries, Prescott, by Protheroe & Morris, at 12.30. |
| FRIDAY, FEB. 14.— | Sale of Hollies and Rhododendrons, at the Eccleston Nurseries, Prescott, at 12.30.—Roses, Plants, &c., at 12, and Orchids, at 12.30, by Protheroe & Morris. (For further particulars see Advertisement columns.) |

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick —39° 0'.

ACTUAL TEMPERATURES:—

LONDON.—February 5 (6 P.M.): Max. 38°; Min. 34°.
February 6.—Mild; dull.

PROVINCES.—February 5 (6 P.M.): Max. 41°, Scilly; Min. 33°, East Coast.

WELL in advance of the annual meeting on February 11, the Council of the Royal Horticultural Society has issued its annual report. It is in the main of a highly satisfactory character, financially and otherwise, but while, on the one hand, it contains little that the Fellows do not know already, on the other, it is silent upon the point of all others upon which the Fellows are most anxious to have information. We must possess our souls in patience till the annual meeting, when in all probability the President will be able to announce what has been done in the matter of obtaining a site for the erection of a Hall. We have not space to reprint the report in full, but we may comment on some of the more important of its contents. No fewer than 930 new Fellows have been elected in the past year, a fact which we can only characterise as "prodigious."

The net cost of maintaining Chiswick is put down at £1,576. The success of the Chiswick students in spite of the somewhat meagre opportunities afforded them is very gratifying. It is suggested that in future the examinations of pupils be held in February instead of in April, as being a more convenient season. In some quarters we hear complaints that the examination is not of a more directly practical character. If the candidates were closing their educational career instead of beginning it, there would be some force in this objection. Practical experience can only be obtained by practical work. To expect youths who have only been a short time in the garden to be expert practitioners is unreasonable. This points to the desirability of a preliminary examination to be held, say, at the end of the first or

second year of pupilage, and a final examination of a practical character two or three years later.

No fewer than 983 awards of some degree or other have been made during the year by the various committees. Of these no fewer than 408 were allotted by the Floral and 191 by the Orchid Committees. These figures, we think still, indicate an excessive liberality on the part of the censors, calculated to materially lower the value of the several awards. We are glad to see an attempt to meet this contingency by the promulgation of a new rule, that any proposal for an award "shall not be considered as carried unless the number of votes recorded for the proposal be at least double the number voting against it." We shall be glad to see this majority raised to a two-thirds majority in a committee of not fewer than twenty members.

It is a matter for satisfaction to find that several of the special societies have intimated their intention of holding their exhibitions in conjunction with the Society's meetings, and in future the show Tulips will be dealt with by the Narcissus Committee. We have always regretted the frittering away of means and energy occasioned by the special societies. They should, we think, be treated as sections of the parent Society, with a representative on the Council, and invested with Home Rule in all special matters. Extra prizes could be provided for as they are now. By some such means the minor societies would gain in dignity, and be less exposed to the charge of self-glorification of individuals.

The Fruit Show at the Crystal Palace is a most momentous matter as regards the promotion and improvement of fruit-culture. The Fellows do not appear to realise the importance of the subject as they should do. It is really a matter of national concern, which in other countries would be undertaken, or at least liberally helped by the Government.

Of the *Journal* we have lately spoken. The Fellows can but feel satisfied with the spirit with which this excellent publication is carried on.

One hundred and sixteen local societies have become affiliated to the Royal Horticultural Society during the year. This suggests that the Council might devise means for increasing the utility of provincial shows. They are very agreeable meetings, eagerly sought after by prize-winners, and even by commercial firms, but their influence in the promotion of horticulture is surely not proportionate to the efforts made. An annual meeting at which delegates from the local and special societies might be present to discuss matters of interest to them all is very desirable.

And this brings us to the matter not mentioned in the report, but which is uppermost in the minds of those actively concerned in the work of the Society. We mean the establishment of a horticultural Institute to serve as headquarters for the Society, and in which the gardening charities, the special societies, and all associations connected with horticulture, might find a home so far as it might be possible or expedient. Never was the Society in a better position to undertake such responsibilities, never were there greater chances of support than at present. What better way of celebrating the centenary of the Society

can be suggested? The Fellows await developments with eager interest. In the meantime, we believe negotiations of a satisfactory character are in progress, though not in a state to be formally divulged. In any case, they must be submitted to the Fellows for approval before any absolutely binding step is taken.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the committees of this Society will take place on Tuesday, February 11, in the Drill Hall, Buckingham Gate, S.W. The annual general meeting of the Fellows of the Society will also be held in the Drill Hall at 3 P.M. on the same date.

—At a general meeting of the Royal Horticultural Society, held on Tuesday, Jan. 28, fifty-two new Fellows were elected—amongst them being the Countess of KENMARE, the Countess of SEFTON, and the Countess of ST. GERMAN—making a total of 123 elected since the beginning of the present year.

IRIS PERSICA.—Among Mr. WALLACE'S beautiful collection of spring-flowering Irises shown at the Drill Hall on the 28th ult., was a flower of *Iris persica* with six sepals (falls), six petals (standards), six stamens opposite to the sepals, and six petaloid styles. The natural supposition would be that this was a case of the union of two flowers, but against this view is the fact that the parts of the flower are perfect in number. In cases of fusion, some of the parts get squeezed out and obliterated, so that instead of twenty-four, as there were in this case, there might be twenty or some smaller number.

HORTICULTURAL CLUB.—The annual general meeting will be held in the Club Room, Hotel Windsor, on Tuesday, February 11, at 5 P.M.; and the annual dinner will be held in the same place at 6 P.M. We regret to see that the founder of this useful Institution, the Rev. H. H. D'OMBRAIN, has found it requisite to resign his post as Secretary.

ALLEGED CROSS BETWEEN A DWARF BEAN AND A PEA.—Mr. W. SMYTHE sends us two seeds of a dwarf Bean (*Phaseolus*), and one seed of an alleged cross between the Bean and a Pea (*Pisum*). We must not say that such a bi-generic cross is beyond the range of possibility, but the probabilities are that some oversight has occurred. In any case the supposed hybrid seed is very curious. The seeds of the Bean are about 12 mill. long, 8 mill. wide, compressed from side to side, oblong, obtuse at both ends, slightly kidney-shaped, chestnut-brown, shining, with a white, oblong, roundish scar or hilum, about 4 mill. long, partly surrounded by a blackish ring. The alleged hybrid seed is 11 mill. long, 9 mill. lat., greenish-yellow, oblong-ovoid, obtuse at each end, neither flattened nor kidney-shaped. The hilum is white, oblong, not surrounded by a deeper-coloured ring.

FORESTRY.—We hear that a Departmental Committee has been appointed to consider and report on forestry and woodlands in the United Kingdom.

"TRAITÉ DE CHIMIE AGRICOLE."—The first edition of the *Traité de Chimie Agricole* appeared ten years ago and was soon exhausted, and in the newly-published second edition, M. DEHÉRAIN has brought the work up to date by chronicling therein the discoveries made in the last ten years. Among the chapters that have been revised and enlarged may be mentioned those on germination, soluble manures, penetration and decomposition of carbonic acid in leaves, reduction

of nitrates and formation of albuminoids in the plant, growth, maturity, &c. There are also short monographs on Colza, Wheat, Oats, Beetroot, Potatoes, and the Vine. The author also records the results of scientific experiments relating to the circulation of water in the plant, enrichment of the soil, fermentations of arable land, calcareous applications, chemical manures and mixed manures. In fact, the treatise is thoroughly up to date, and should prove valuable to those for whose use it is intended. (Publishers, MASSON ET CIE., Paris.)

NATIONAL ROSE SOCIETY.—A meeting of the General Purposes Committee will be held at the rooms of the Horticultural Club, Hotel Windsor, Victoria Street, Westminster, on Tuesday, the 11th inst., at 2 P.M. A meeting of the Committee will be held on the same day at 3 P.M., H. HONYWOOD D'OMBRAIN, EDWARD MAWLEY, Hon. Secretaries.

THE CARE OF EPPING FOREST.—The annual report of the Epping Forest Committee details the necessary thinning carried out among the old trees during the past year, and the planting and due protection of young plants. The ponds have been cleaned and deepened; but for various reasons, drought being one of them, boating on the ponds has been less popular than usual. The committee has received the gift of a piece of freehold land and a cottage at Fairmead, Loughton, from Mr. GELLATLY, one of the verderers.

THE LAW.—An interesting case decided at the Tribunal of Commerce at Ghent is reported in the current number of the *Revue de l'Horticulture Belge*. The plaintiff purchaser sought damages from the defendant salesman, because the offsets had been taken off from some plants of *Draecena neo-caledonica* before they were delivered. The defendant pleaded the custom of the trade. The Court gave judgment for the plaintiff, saying, that if the defendant wished to retain the offshoots he should have made an express stipulation to that effect.

SEED LIST OF THE JARDIN DES PLANTES.—We have received the "Index seminum" from the Paris garden. It is a lengthy document, and is the first of its kind signed by the new Professor, M. J. COSTANTIN. Applications for exchange of seeds, &c., should be made to M. le Directeur du Muséum d'Histoire Naturelle (Service de la Culture), Rue Cuvier 57, Paris.

IRISH MIGRATORY LABOURERS.—In the official report published by the Department of Agriculture and Technical Instruction for Ireland, statistics are given of the number of Irish labourers migrant to Great Britain, and their condition. In absolute numbers, as well as considered in relation to the population, there has been a great decline during the last fifty years, partly owing to permanent emigration, to the curtailment of the cropped area of Great Britain, and to the use of agricultural machinery, and partly to the local development in Ireland of fishing and other industries. Strangely enough, one of the characteristics of Irish migrants is said to be "one of extreme thrift while in Great Britain, in order to save against the rainy day in the winter and early spring. A large Scotch employer of Irish labourers told of a lad working on his own farm who was brought to him one day in a faint. On enquiry, he found that the young fellow had not had a proper meal for several days, every penny he earned being immediately despatched to the old people in Mayo. These side-lights on the Irish labourer in Great Britain make one wish that an industry

and a self-sacrificing spirit of such a kind could find their opportunities on Irish soil." Certain it is that the Irish workman seems to do better anywhere than at home, exhibiting as a colonist or migrant qualities that are certainly not the usual characteristics of the nation. The development is often to be ascribed to physical benefits consequent on an improved climate and better food and clothing; but though these conditions may affect settled emigrants, they can have no influence on new-comers, who frequently, as in the case above mentioned, pass through a time of much privation.

"LES ROUTES FRUITIÈRES."—Par CHARLES BALTET, Horticulteur à Troyes (Paris: Librairie Agricole de la Maison Rustique, 26, Rue Jacob). M. BALTET here gives us a reprint from the *Journal d'Agriculture Pratique*, which we commend to the notice of all interested in fruit culture. He treats of the "but, origine, installation, produit, et choix des espèces à planter." The "but" is (translating freely), "to plant the borders of roads, streets, canals, and rivers, with fruit-trees; this is an act of humanity, foresight, and patriotism." We can but hope that the behaviour of the general public will justify this confidence if the scheme was universally adopted. "France includes more than 500,000 fruit-trees planted along her highways," and as these are appreciably and widely used, there seems every justification for adding yet further to the number.

THE SHASTA "DAISY."—This, like the Ox-eye "Daisy," from which it originated, is no true Daisy, but a variety raised by Mr. LUTHER BURBANK. The flower-heads, according to the figure, are 4 inches across, and of a glistening white. The plant is perennial, and is said to be the outcome of a cross between the American species with the European *C. Leucanthemum*. This was again crossed with the Japanese *C. nipponicum*, and rigid selection exercised till the present fine strain has been produced. Other varieties are promised in the future, some coloured, others "double."

THE SURVEYORS' INSTITUTION.—The next ordinary general meeting will be held in the Lecture Hall of the Institution, on Monday, February 10, when a discussion will take place on the papers read by Mr. A. DUDLEY CLARKE and Mr. G. S. MATHEWS, entitled "The Final Report of the Local Taxation Commission."

CAPE FRUIT.—The Castle Co.'s S.S. the *Kildonan Castle* has just brought home 406 packages of Plums, 34 of Apricots, 155 of Peaches, 1 of Nectarines, 6 of Pears, total 600 packages. The *Saxon* followed the above, bringing 744 packages of Plums, 52 of Apricots, and 259 of Peaches—in all, 1,055 packages of fruit.

MR. SHERWOOD.—One of the most pleasant features at the testimonial dinner to Mr. RICHARD DEAN was the announcement which was made by Mr. EDWARD SHERWOOD, to the effect that an improvement was manifest in the health of his father. Mr. SHERWOOD is so highly esteemed in horticultural circles that the news of his severe illness was felt as a personal matter, and the good news which his son was able to give was received with corresponding satisfaction.

THE DINNER TO MR. RICHARD DEAN.—Those who read our account of the presentation and dinner to Mr. RICHARD DEAN will feel no surprise at the enthusiastic nature of the proceedings. The narrative of his career of work during half a century is really astonishing. To it must be added what was only

slightly touched on at the meeting—his work as a journalist. How many reports of flower shows must he have written? How often have we had to avail ourselves of his services? In this connection we would specially allude to his review of horticulture and floriculture published at the time of our Jubilee, and also at the beginning of the century. No one had fuller knowledge of the subject, and no one could have treated it better from his point of view. We hope long to have the aid of our honoured friend.

THE NATIONAL SWEET PEA SOCIETY, at their Annual Meeting on the 28th ult., decided to hold its next exhibition on July 15 and 16, at the Royal Aquarium, Westminster.

BOOK SALES.—During Friday and Saturday last, Messrs. SOTHEY dispersed the libraries of the late Mr. W. MATHEWS and of the Rev. H. L. NELTHROPP, F.S.A. The MATHEWS collection included REICHENBACH'S *Icones Floræ*, 1850 to 1899, for £63 10s.; the *Alpine Journal*, 1863 to 1901, £29 10s.; COOK'S *British Fungi*, 1881 to 1891, £23; A. W. MOORE'S *The Alps in 1864*, £10 10s.; SOWERBY'S *British Botany*, 16 volumes, £33; and books like COLMAN'S *Scenes from the Snowfield*, 1859, for £6 10s.

THE BOTANICAL GARDENS, MANCHESTER.—The Royal Botanical and Horticultural Society of Manchester has again experienced ill-success. At the seventy-fourth annual meeting, recently held, the report stated that there had been a loss during 1901 of £639 18s. 4d., which increases the liabilities of the Society to £7,398 1s. 9d. Mr. W. FOGG, in supporting the resolution to adopt the report, said that for the last nine years there had been a continual loss, amounting in the aggregate, with allowing for one year's profit, to £739. He was prepared to suggest that the gardens should be handed over to the Corporation, under whose supervision the gardens would be much better carried on.

PINANGA KUHLLII, Blume.

[SUPPLEMENTARY ILLUSTRATION.]

THE Pinangas are Palms still too little valued by amateurs, but I cannot say what is the cause of this. They are rapid growers, forming strong plants attaining to a man's height in about four or five years; most of them form fine bushes by branching at the base, their leaves are charmingly varied as well as their general appearance, the sections often being by no means regular, as in their colour. In a short time they form a stem, and then they early begin to flower and to fruit. Their cultivation is without difficulty, if they have a regular temperature at the roots, and sufficient moisture. I have kept them for a long time in my room, with the pots embedded in moist sphagnum. This precaution enables many Palms to be cultivated indoors, which will not as a rule grow in the dry air of a living room. One of the hardiest species of Pinanga is *P. KuhlII*, Blume, a Palm 16 to 25 feet high, with annulate stems 2 inches in diameter, the younger nodes reddish. The fronds are terminal, have a long cylindrical base, a petiole 2 feet long, an elliptical pinatisect blade 4 feet long and 2½ feet broad, with sub-opposite segments, the lower ones 4 to 5 inches, the upper ones only 2 inches distant from each other; the uppermost 1 foot long, 2 inches broad at the apex, with bidentate teeth 4 to 5 inches long, 2 inches broad; the lateral segments falcate-lanceolate, 2 to 2½ inches broad, long acuminate, 1½ to 2½ feet long. This species is a native of the lower mountain woods of western Java. When the inflorescences appear beyond the leaves the

male flowers first develop, and after flowering fall off in a few days; then the female flowers appear. For pollination the male flowers must be collected and laid away in a dry place. For the photograph I am indebted to Prof. Treub of Buitenzorg, Udo Dummer, Gross Lichterfelde, Berlin.

PRESENTATION TO MR. RICHARD DEAN, V.M.H.

ABOUT fifty persons assembled at the Royal Aquarium, Westminster, on Tuesday evening last to entertain at dinner Mr. Richard Dean, and to present to him an illuminated address, accompanied with a cheque for £300. Mr. Dean attained his seventy-second birthday on the previous day.

Very much regret was expressed that Mr. N. N. Sherwood, who has been Treasurer to the Testimonial Fund, was prevented by illness from attending; and by further misfortune, Mr. W. Marshall, who was to have presided in Mr. Sherwood's absence, was also confined to his house by temporary indisposition. The senior Secretary to the Fund, Mr. M. Cuthbertson, of Rothsay, chief partner in the firm of Messrs. Dobbie & Co., in these circumstances discharged the duties of "The Chair" in excellent manner.

When the Royal toasts had been honoured, Mr. Cuthbertson in proposing that of Mr. Dean, said that it had been felt for some time that there should be some means taken to show an appreciation of the immense work Mr. Dean had done for horticulture during so many years. A few gentlemen, who should be nameless, agreed that a fitting opportunity for doing this was afforded by the fact that Mr. Dean was nearing the end of his seventy-second year. The chairman, being also joint secretary, had been particularly struck by the measure of spontaneity in the response, so many having subscribed who could only have known what was going on from the accounts in the horticultural papers. He referred to some of the principal work of Mr. Dean since the year 1857, and said that he was one of the founders of the Royal Gardeners' Orphan Fund, and remained upon its committee until the end of last year. Mr. Cuthbertson had known him for twenty years. He had been Mr. Dean's host, his guest, his equal (when judging florists' flowers at Wolverhampton and elsewhere), but never his superior. With a few further appropriate remarks, the chairman then made the presentation.

Mr. DEAN, in rising to respond, was for a minute quite overcome, but gaining mastery of his feelings, made a most interesting speech, which was practically the story of his life.

He was the son of a gardener, his father being foreman in a nursery near Southampton; but at thirteen years of age he was obliged to turn out and earn a living for himself. He was under-gardener to a gentleman who became Mayor of Southampton in 1859, when the under-gardener was made the Mayor's body-guard, and was brought into association with gentlemen and functions that stirred his imagination and inspired his ambition. In 1853 Dean entered the nursery of Charles Turner at Slough, earning 14s. a week. He was sent to various exhibitions with Turner's wonderful florist's flowers, and in many ways gained much experience. In 1857 he entered a large seed business in London, but it was not long before Mr. Turner informed Dean that a secretary was needed for the National Floricultural Society, in succession to John Edwards. Dean accepted this position. In 1858 the first great National Rose show was held, and he helped the present Dean of Rochester in the work on that occasion. In 1861 he joyfully received an invitation from Mr. Eyles to assist in judging at one of the great shows of the Royal Horticultural Society. In 1864, Mr. Dean succeeded John Edwards as secretary to the old Horticultural Club that met monthly at Anderson's Hotel, and where John Downie, William Paul, Dodds, Thomas Moore, and other well-remembered men gathered. In 1865, Dean went to Chester to take part in the business of F. A. Dickson & Co., but was not very comfortable there, and the late Dr. Hogg, hearing of this, invited him to return to London and become assistant-secretary to the great International Exhibition of May, 1866. At this marvellous exhibition there were 3½ acres of land covered over, and the total receipts amounted to £1618 4s. 7d. There were 110 judges. It was intended that the show should continue for four days, but at the end of that time it was found that the people of London were only awakening to the fact that a great international exhibition was taking place in their midst, and the exhibition was therefore maintained for five days longer. Financial disaster was thus averted, and as a result of that exhibition £1000 was given to the Gardeners' Royal Benevolent Institution, another sum was devoted to the purchase of the Lindley Library, and a considerable portion was spent in the preparation of a report of the proceedings, edited by Dr. Masters. The ground for the exhibition was laid out by a committee of Standish, Gibson, and Fortune, assisted by Mr. Eyles and others. At a dinner held at The Star and Garter, Richmond, sub-

sequent to the exhibition, there were twenty-one gentlemen present, all of whom had taken a conspicuous part in the work of the exhibition. After dinner the company was photographed, and of those twenty-one persons, only six are now alive, including Sir Daniel Cooper, Mr. Harry J. Veitch, Mr. W. Paul, Dr. M. T. Masters, Mr. W. Bull, and R. Dean.

In 1867 a series of provincial exhibitions was commenced by the Royal Horticultural Society, and Mr. Dean was engaged in some capacity or other at all of these excepting the last one, held at Preston, which he did not see. In 1870 and previously he was in Ireland, and visited many gardens on behalf of the *Irish Gardener*. He delivered a lecture upon spring flowers at the Rotunda, Dublin. Later he was associated with the late William Thomson in editing *The Gardener*, a Scottish horticultural journal. From 1873 to 1876 he had work in connection with City flower shows held in Finsbury Park, and with horticultural shows at Richmond. In 1889 the great fruit show was held in the Guildhall.

Mr. Dean was Secretary of two Hallsford Funds, one in 1876, when a storm visited North London, and £800 was obtained for relief purposes; and one in 1879, when a similar storm visited South London, and a sum of £750 was subscribed. He was Secretary also of the Postal Reform Union, a deputation from which waited upon the Rt. Hon. Wm. Monsell, Postmaster General, and which was instrumental in bringing about first the sample post, and next the parcel post, that is now so useful to the horticultural trade and others.

In 1890 Mr. Dean succeeded William Holmes as Secretary of the National Chrysanthemum Society, which position he still holds. In 1892 and 1893 Mr. Dean was employed in promoting a series of horticultural exhibitions at Earl's Court; and about the same time was engaged in carrying out exhibitions at the People's Palace in East London, and in giving horticultural lectures there. What has happened since that time, said Mr. Dean, was known to most of those present. He had done fifty years' honest horticultural work. He had been instrumental in connection with his brother Alexander in improving the Primula, and was among the first to get a break in P. Sieboldi. He had also done something with Potatoes, and in the way of improving the Viola. Mr. Dean said that he had attempted throughout to play the game of life fairly and squarely. He had doubtless made mistakes, but archbishops had done this also.

Mr. George Gordon, V.M.H., in proposing the toast of "Mr. N. Sherwood, Hon. Treasurer and Chairman of the Fund," referred feelingly to the cause of Mr. Sherwood's absence; and Mr. Ed. Sherwood replying, gave the welcome news that his father was much better, and that he had that day telephoned to his sons that he would have liked to have been present, but the doctor forbade.

Mr. T. Bevan proposed the toast of "The Testimonial Committee," and Mr. J. W. Wilkinson, responding, declared that he did not know which he most admired in Mr. Dean, his ability, his activity, or his audacity! "The Hon. Secretaries" was proposed by Mr. Robert Sydenham, and a response was made by Mr. H. J. Jones, who has shown extraordinary energy and tact in advancing the interests of the Testimonial. Mr. Jones read some amusing extracts from a large number of letters from gentlemen unable to be present. Mr. Owen Greening proposed "The Press" in a very felicitous speech, and it was responded to by Mr. C. H. Curtis, and Mr. R. Hooper Pearson.

ILLUMINATED ADDRESS.

The words upon the vellum were as follows:—"This address, with the accompanying purse containing £300, is presented to you on the occasion of your entering your seventy-third year, in grateful recognition of the many valuable services you have rendered to Horticulture during the past fifty years, and with the best wishes of all the subscribers." Then follow the names of the Secretaries, Treasurer, Committee, and of about 300 subscribers to the fund.

ENQUIRY.

A CORRESPONDENT, signing his communication "A. D. Berney," would be glad to be informed by some of our correspondents, acquainted with the railways of South Africa, what kinds of timber are used as sleepers on those lines.

PLANT PORTRAITS.

AZALEA INDICA MADAME EMMA ECKHAUTE.—Double rose-pink, edged with white. Described and figured by M. Charles Pynaert in the *Revue de l'Horticulture Belge* for February.

DELPHINIUM BICOLOR, Nuttall, *Meehans' Monthly*, January.

FICUS RADICANS VARIEGATA, *Revue de l'Horticulture Belge*, February.

LILAC HYBRID—Between *Syringa Bretschneideri* and *S. Josikoa*, raised by M. Henry in the Jardin des Plantes, *Revue Horticole*, January 16.

HÆMANTHUS IMPERIALIS.

A FINE flower-head of this handsome plant was shown by M. Linden, of Brussels, at the last meeting of the Royal Horticultural Society at the Drill Hall. The head of bloom was about 6 inches in diameter, poised on a stalk of about 15 inches in height, the colour being a pleasing shade of salmon-red. The flower-segments are longer (see fig. 33, p. 99), but more pointed than those of *H. mirabilis*, figured in *Gardeners' Chronicle*, May 25 last year, which had very superior flowers to the plant shown as *H. mirabilis* at the Drill Hall, with *H. imperialis*.

HOME CORRESPONDENCE.

NARCISSUS TAZETTA.—When in Boston, Mass., recently, I saw in Messrs. Farquhar's seed store an elegant mode of growing this pretty bulb. A shallow bowl was filled with pebbles about the size of a Hazel-nut, and a bulb was placed in the centre, and round the sides in thumb-pots were small plants of *Cyperus alternifolius*; the bowl was filled to the brim with water, and arranged in this manner the bowl formed a beautiful object in the conservatory at once. Another mode of making a bowl is to sow the top of the pebbles with seeds of Timothy-grass (*Phleum pratense*), and by the time the *Narcissus* is in bloom this will have formed quite a green carpet around it. *S. B. Dicks.*

CRINUM MOOREI AND C. POWELLI.—It may interest your correspondent "S. W. F." and others to know that these two majestic *Crinums* were produced over thirty years ago at Glasnevin Botanic Gardens by the late eminent Director, Dr. David Moore, and carefully developed under the care of his indoor foreman, Mr. Powell, to whom he dedicated one of the issues, known as *C. Powellii* ×. Both plants remained for many years in the border, stretching closely along the front of the long-glass-range, producing immense *Agapanthus*-like clumps, and displaying an unequalled stateliness of foliage and bloom unknown in the whole of the *Amaryllis* family. In some circular beds in the grass, not many yards distant, *Lilium giganteum* and *L. cordifolium* were to be seen growing in perfection; the former when in full bloom was usually 6 to 8 feet high. About 50 yards distant, and near the Director's house, stood the first Pampas Grass planted in the British Isles. By the way, Mr. John Orr, an eminent Scotch cryptogamic botanist and pupil of Sir W. Hooker, was then in charge of the fernery. He was over seventy years of age, and was highly esteemed by the late Dr. Moore as his valued aid in assisting in the study and discovery of many Irish mosses. *J. Murison.*

EARLY SNOWDROPS.—In a recent issue of the *Gardeners' Chronicle*, I note that the first Snowdrops were gathered at Ealing on January 21. Here the flowers have been gathered in quantity since January 16, and sent to my employer in London. Certainly, the Snowdrops here are not exposed to the north wind, but in many cases they are exposed on the south-east, where there is very little to protect them. Last year we were enabled to gather blossoms quite three weeks earlier. To-day, February 1, my son brought in a Daffodil bloom just starting to open. The Daffodils are well sheltered in all directions, being surrounded by large bushes of *Rhododendrons*. We are bounded on the south by the Solway Firth, which tempers the climate of the Isle. The Snowdrops cover some acres of ground, and about as much ground will soon be ablaze with Daffodils. *J. Jeffrey, The Gardens, St. Mary's Isle, Kirkcudbright.*

PEAS AND NITROGEN.—The editorial addendum to a recent paragraph on Peas and manures, because apparently so incomprehensible, seems to have proved a stumbling-block to some worthy and very practically-minded gardener-contributors, who are astounded to read that

"nitrogenous manure is not of any special value to Peas, if not actually injurious." Probably these readers have not followed closely scientific investigations, which have shown that members of the pulse tribe, or pod-bearing plants, have a capacity not common to other forms of plant-life, of being able to abstract from the air and to feed upon it, nitrogen, which constitutes so large an element in the atmosphere. It is found that Peas, for instance, possess this capacity just in proportion as the plant-roots have on them small swellings or nodules, and these small eruptions are present on the roots of all the Leguminosæ in greater or less quantity. Thus, the editorial observation is based on what is, without doubt, sound scientific facts, and is easily understood by those familiar with the

ties grown under absolutely similar conditions from which nitrogenous manures have been withheld. That serves to show that however apparently sound is the scientific theory, its weak feature is the fact that the free application of nitrogen as manure produces far better results. But then the question is, in what form for Peas, &c., is nitrogen as manure best supplied? I think ninety-nine out of every hundred growers would say, "In the form of good animal manure." I fear it is a case in which I can hardly be other than partial, as in all cases I have found that the effect on pulse of any application of good stable or other animal manure is to far exceed in growth and crop-production what can be obtained by the application of artificial manures even when those be liberally utilised.

LILY OF THE VALLEY.—I was very pleased to see one communication concerning the failure of the Lily of the Valley to flower satisfactorily, but at the same time your correspondent, writing under the signature "E.N., Chatham," does not give the cause of the failure, inasmuch as he says in the first place that the failure, by the description given, points to too much heat being employed, and then in the same breath he says, but he has others in Cocoa-nut fibre refuse, which did well. The cause of the trouble may be in the peat. He then gives a very good substitute for Cocoa-fibre refuse, which he says, with a steady temperature of 75°, gives no trouble. I may say that I never reach that temperature, preferring from 55° to 60°, which I find suits retarded Lily of the Valley admirably. I have noticed that whenever a question has been asked about retarded plants, it is very seldom there is much discussion on the subject, so that it makes one think that there are some secrets concerning the cultivation that those who grow them by the thousands do not wish to divulge for the benefit of others. I am sure a good article written and printed in these pages by one of the large growers who have shown us at different times what can be done with these retarded things, and the success they have gained, I am sure is not without experiments in the first instance, would not only be read with keen interest by us novices, but would give us heart to go in for these subjects more if we were sure we should not have all failures, and I also maintain it would open up the trade for them in not too busy a season of the year. *Midland.*

GAS-TAR AND CLAY DRESSING FOR VINES.—The above-named dressing seems to be much recommended as an antidote to mealy-bug on Grape-vines. No doubt it will destroy and check the pest, but at the same time it has a most curious effect on the Vines, and which I have no doubt has been observed by other practical gardeners, viz., that after the Vines have broken, and reached the tying-down stage, that the young shoots so dislike the tar that they grow themselves almost away from the parent stem; that tying down tar-dressed Vines is almost a fine art—so much so, that I should not like to give a young gardener the job; and for that reason I shall never use gas-tar dressing, after an experience some years since. Half a pint of Fir-tree oil to a gallon of clay puddle is safe, and equally effective, without the drawback of the tar effect at the time of tying down the Vine. Of course, whatever remedy is used, some of the insects will appear in the spring, and a sharp look-out should be kept, and as one of your correspondents observed, should be touched with methylated spirit; and all gardeners who are by circumstances compelled to make their vineries houses of general utility, stove, greenhouse, and vinery in turn, bug will continue to be a foe for a gardener to reckon with, in spite of all the remedies, ancient and modern. There is no remedy but cleanliness and hard work. If the common wren can find its way by broken pane or chink to any glass-house, it is very fond of the above noxious insects. *R. M., Newbury.*

SELECT VARIETIES OF SWEET PEAS.—That the selection of twenty-four varieties of Sweet Peas enumerated in the *Gardeners' Chronicle* of January 11 is fairly representative will be the opinion of many growers of this popular flower. Mr. Simpson evidently does not favour the striped varieties, but some of these are very attractive, notably Princess of Wales and America, the former striped mauve on a white ground, and the latter bright red striped, and very showy. In the dark maroon selfs, Black Knight would make an excellent companion to Othello, and has the merit of being exceptionally free flowering; Navy Blue will always hold its own amongst the dark blue varieties, of which Emily Eckford and Captain of the Blues are favourites. A distinct and beautiful variety which I have grown for two seasons is Captivation, a pleasing shade of magenta. Five of the



FIG. 33.—HEMANTHUS IMPERIALIS: FLOWERS SALMON-RED. (SEE P. 98.)

nodule theory. But gardening practice has shown, that so far from the application of nitrogenous manure to Peas, Beans, or others of the family being harmful, it is really beneficial. On the other hand, it does not seem yet to have been shown whether the free application of nitrogenous manures to the soil on which pod-bearing plants are grown, to some extent renders the natural abstraction of nitrogen from the air for the benefit of the crop inoperative, or partially so. Has anyone so far tested the nodule creation on roots of Pea plants that have from their inception been liberally fed with nitrogen as manure, as compared with the product on roots of plants that have not been so fed, and have had to obtain the essential nitrogen from the atmosphere? As a rule, it is found that Peas and Beans liberally fed with manure from the first produce the stoutest stems, the largest and most luxuriant leafage, and the finest as well as greatest abundance of pods, as compared with the plants and produce of the same varie-

Now, good animal manure contains free nitrogen in greater degree, probably, than it does either of phosphate or potash; yet when applied to ground on which pod-bearing crops are to be grown in the winter, there is no waste, and the nitrogen seems to be fully utilised. If that be so, why is it so commonly noticed that nitrate of soda, the favourite nitrogenous manure of the chemical compound apostles, is advised to be applied so late as after crops have made growth, lest it be washed out and wasted. If not wasted in the one case, why so in the other? No doubt, as experiments here and all over the kingdom have shown, that these chemical manures in dry seasons hardly become soluble, hence to a large extent, no doubt, their comparative ineffectiveness on crops. To test them fairly against animal manures, they want to be applied early in the year, and thus become thoroughly soluble. A. D. [The point is not whether nitrogenous manure is beneficial (we all know it is), but whether the benefit is proportionate to the expenditure. Ep.]

orange-pink varieties are given in Mr. Simpson's list, the best of these without doubt being Miss Willmott, probably the largest Sweet Pea yet raised, and grand in every way. All varieties of this particular colour are more or less scorched by the hot sun, and to present them in their true character it is advisable to shade them with some light material during the hottest part of the day. Amongst the so-called yellow Sweet Peas, the new Hon. Mrs. Kenyon is an advance, more in size, however, than in colour, made more apparent by its fine, erect standard. Blanche Burpee, the well-known white, also has this desirable feature, which doubtless accounts for its popularity over the later raised Sadie Burpee. Among rose-coloured varieties, Prince of Wales and Royal Rose are splendid, both being very vigorous growers, which frequently produce four flowers on a stem. Mrs. Dugdale, also of this shade, has a tendency to come streaky and splashed with a lighter colour. Light blue or lavender shades are well represented in Lady Grisel Hamilton and Countess of Radnor, still one of the best. No better pink could be grown than the variety called Lovely, worthy the name, although Mr. Robert Sydenham maintains that Prima Donna is slightly superior. The nearest approach to a scarlet is Prince Edward of York, a very desirable variety. In conclusion, I have proved the merits of the following dozen—Blanche Burpee, Black Knight, Lady Grisel Hamilton, Navy Blue, Miss Willmott, Prince of Wales, Captivation, Gorgeous, Lovely, Salopian, Prince Edward of York, Queen Victoria. T. H. B., Walthampton.

AN EARLY-HATCHED THRUSH.—On Wednesday, January 22, 1902, when out shooting pheasants, I found on the ground amongst the Ivy leaves a young fledged thrush, but not able to fly; it sat and opened its beak to be fed, just as it would in the nest. W. H. W., Belvoir Park, Belfast.

SALE OF HORTICULTURAL POISONS.—I am extremely pleased to gather from your columns of Feb. 1 that energetic steps are being taken to remedy the absurdity involved in the present regulation regarding the above. Taking the well-known XL-All fumigating materials as a popular example, I may cite my own case as illustrating the inconvenience and even damage involved. For years I had been in the habit of getting a supply from a well-known horticultural firm in London Wall, but on the last occasion when I went there, I was informed they were debarred from selling, and could give me no information as to how I could obtain it. Searching the advertising columns where it used to appear as obtainable anywhere, I found that even the advertisements were suspended; and finally, after some days' delay, during which my floral foes were getting well ahead, and laying their new season's eggs, which I aimed at preventing by their annihilation in time, I found the manufacturer's address, and made my way to Southwark. Even there, however, the ridiculous law blocked me, and all I could do was to get the address of a City chemist, who was apparently the sole agent. This involved another journey, which resulted in my getting what I wanted with a considerable expenditure of time and trouble, and a delay which led to the subsequent detriment of my plants by the advent of a fresh generation of foes. Furthermore the chemist naturally was absolutely devoid of practical experience as regarded the application of the remedy, while at my previous source of supply I had only to ask to obtain reliable advice, since the tradesmen were both nurserymen and salesmen. Hence I could not but feel that any such invasion of a qualified trade by an utterly unqualified one was not merely an anomaly, but a great wrong both to the rightful trade itself, and its legitimate customers, who very often required skilled advice as well as the materials with which to carry it out. What would the Pharmaceutical Society think if the horticultural trade claimed and obtained a monopoly of all vegetable ingredients, and the right to dis-

pense them without the ability to specify their particular uses and modes of application? Many garden plants, too, are very poisonous: Monkshood (*Aconitum*) to wit, has led to many deaths by being taken for Horseradish: far more fatalities have occurred in this way than can be laid to the charge of horticultural remedies. Why, then, does not the Pharmaceutical Society step in and claim the right of sale of all such plants, and keep a register to be signed by the purchasers? These suggestions are ridiculous on the face of them, but not more so than the unjustifiable attempt of one trade to draw a hard-and-fast frontier line which is clearly a long way within the boundaries of another, to the hindrance of business, and the detriment of the customer, to say nothing of the vested interests of the inventors and proprietors of extremely valuable articles, whose interests must have suffered severely by the trade being suspended for so long in mid-air, like Mahomet's coffin, while the nurserymen and pharmacutists fight out the battle. C. T. D.

MALCOLM DUNN MEMORIAL FUND.—I notice in your issue of 1st inst. a communication from Mr. J. Fulton on this matter. There has been considerable delay in issuing a report of this Fund, but as it would serve no good purpose to enter into the causes, I do not trouble you with them. I anticipate, however, that a report will be issued very shortly. P. Murray Thomson, Joint Secretary.

Obituary.

THE LATE MR. DAVID SYME, EDINBURGH.—The remains of Mr. David Syme, whose death was briefly announced in our last issue, were interred in Sighthill Cemetery, Glasgow, on Wednesday, Jan. 29. For over half a century, says the *Scotsman*, Mr. Syme was a prominent man in the seed trade. He began commercial life fifty-six years ago in Glasgow with the firm of J. & R. Thyne. After various changes he came to Edinburgh over forty years ago to undertake the management of the nurseries of Peter Lawson & Son, and when that firm was ultimately formed into a limited liability company he was appointed manager, and latterly managing director. During that long period he controlled the business, which is carried on in all parts of the United Kingdom and abroad, in an eminently satisfactory manner. He was a very genial man, and had friends in all parts of the country. Five or six years ago, when he completed his fiftieth year in the seed trade, a silver service was presented to him in London by representatives of seed firms in the United Kingdom, as well as abroad. When disputes arose between seed merchants in various parts of the country, Mr. Syme was frequently referred to to settle the matter. Mr. Syme was twice married, his second wife pre-deceasing him some years ago.

ED. AMOS PEAK.—We deeply regret having to record the removal by death, in his sixty-eighth year, on January 11, of the much-respected horticulturist, Edward Amos Peak, Parks' Superintendent to the Hull City Corporation for forty-two years.

Mr. Peak was born at Davenport, in Cheshire, in September, 1833, and before many years had elapsed he found himself in the gardens belonging to the late Earl Crewe, Crewe Hall, Cheshire. A few years later he was transferred to Brantinghamthorpe Gardens, in East Yorkshire, where he remained until an opening for him was found in the gardens at Hampton Court Palace. Here he remained, and finally acquired a good all-round experience as a practical gardener; but not feeling satisfied with that post, he secured an appointment under the late

Mr. Niven, the then Curator of the Hull Botanic Gardens, in Linneus Street. Shortly afterwards he was chosen to assist Mr. Niven in forming and laying out the now very beautiful Pearson Park. It was from this time, and until his death, that Mr. Peak proved himself to be the right man in the right place; whilst his botanical knowledge fitted him well for the position he was for so many years afterwards destined to fill.

For years Peak laboured assiduously in the hope that the great horticultural awakening would come, and his anticipations were realised in the formation, under his personal superintendence, of the extensive East and West Parks. He lived, not only to formulate and construct, but to foster and care for the great avenues of trees that line the streets of Hull. The extensive glass structures in the various Hull parks are crowded with evidences of Peak's ability as a plantsman; and the flower-beds are the admiration of all who have seen them.

At the many public functions in the city, Peak displayed marked decorative ability, and the fine Chrysanthemums, together with the artistic manner in which the groups were arranged for exhibition at the Hull Chrysanthemum Society's shows, earned for him general recognition as a decorative artist; but he was not allowed to enter into public competition. He did much planting at the crematorium, sanatorium, burial-grounds, and other public places. By his expressed wish, his body was taken to the crematorium to be consumed. To the trust reposed in him Mr. Peak was faithful to the end; and although a man of a retiring disposition, he was known to a very wide circle of horticultural friends. J. P. Leadbetter, Tranby Croft Gardens.

SOCIETIES.

ROYAL HORTICULTURAL. Scientific Committee.

JANUARY 24.

Present: H. J. Veitch, Esq., in the Chair, and Messrs Druery, Douglas, Holmes, Saunders, Shea, Michael, Bowles, Rev. W. Wilks, Drs. Müller, Cooke, and Masters.

Richardia corms and Cyclamens.—Mr. G. S. SAUNDERS reported on the corms sent to the last meeting: "The *Richardia* corms that I took away from the last meeting of the Scientific Committee are attacked by one of the 'bulb mites,' probably *Rhizoglyphus echinopus*; it is a very difficult pest to deal with. Water at a temperature of 115° Fahr. will kill them. I should add 4 oz. of sulphide of potassium to every quart of water, and allow the bulbs to remain in the mixture for ten minutes or a quarter of an hour. I do not imagine it would injure them in any way, the injury does not seem to have gone very far below the surface, so that it might be well to cut out the injured portion before putting them into the warm water. I should be very careful not to allow any of the earth in which these plants were grown to get upon the potting bench, or any uncontaminated soil.

"As to the *Cyclamens*, I must admit that I was unable to find any eel worms in the roots, but they are affected so exactly in the same manner as others in which I have found them, that I have no doubt but that the 'root-knot eel worm' (*Heterodera radicola*) is the cause. I cannot suggest any remedy, but to prevent the pest spreading the plants and the soil in which they are growing should be burnt, and on no account thrown on to a rubbish-heap, or any of the soil allowed to come in contact with non-infested soil."

Mrs. BATTEN POOL since the previous meeting sent specimens of the *Richardia* in growth to supplement the corms above alluded to. On examining the plants, the older roots were found to be decaying, but an attempt was made to form new roots. The appearances were thought by the Committee to be due to a check caused by cold.

Pteris serrulata.—A firm of nurserymen sent fronds partially destroyed by some insect supposed to be a black-fly. The condition is very common, but the

cause is not perfectly ascertained. The senders were requested to forward specimens of the fly for determination.

Pelargonium Leaves.—With reference to Dr. COOKE's report on these leaves, Mr. FRASER writes:—"I should like to say a word in reply to the suggestions made: (1) As to faulty cultivation. I can plead that I have been an amateur plantsman for over forty years, during fifteen of which, in my younger days, I, single-handed, grew stove and greenhouse plants for exhibition with good success. I always use the best materials I can buy for compost, and have never yet put a plant into a dirty pot. (2) The wash I used was sulphide of potassium and soft-soap, applied both by spraying and liberal ablution, and as fungus and sulphur do not agree, the former may have got the worst of it. (3) My greenhouse has the sun on it sixteen hours a day in the long days, and a fair share in the short ones. It is glazed with glass 16 inches wide, between rafters 1 inch thick, and the glass is washed when necessary, so the plants enjoy all the light it is possible to give them in London. We have had little fog so far. In all my experience I have never seen Pelargonium-leaves decay in the same way before, and to me the cause is still obscure. I now intend to try nitrate of soda, to induce leaf-growth, and later on will report the result."

Soil.—A sample of soil was sent by a firm of seedsmen, but the committee desired to see specimens of plants stated to be injured by it.

Chrysanthemum Rust.—Dr. COOKE made the following communication on this subject:—

"**Chrysanthemum and Cornflower Rust.**—Recently, when I reported to the committee upon these rusts, I applied a scientific name to the fungus doubtfully, and with a mental reservation that in each case they were the Uredo form of Puccinia Hieracii, and this was precisely what the book-makers led me to do.

"I am since informed that in spite of all the efforts and experiments of the heterocismists, they are unable to claim the Uredo of the Chrysanthemum as the Uredo form of Puccinia Hieracii, or of any other Puccinia, which I believed in my own heart all along. Nowadays we are not permitted to trust our eyes, but must have faith in experiments. Hence the poor Chrysanthemum rust is an orphan, or worse, even illegitimate, and must remain as Uredo Chrysanthemi.

"As to the other rust, it awaits the result of experiment; but I am more disposed to call it the Uredo of Puccinia Centauree, which has been united or mixed up with Puccinia Hieracii. I may be permitted to observe that no fewer than fourteen of the old species of Puccinia date before the Reformation! and I know not how many species of Uredo are all bundled together into the latter-day species called Puccinia Hieracii, amongst these being the Puccinia Centauree of Martius, and still nearer to our tramping Uredo, the Puccinia Cyani of Passerini. Let us hope that this also will find rest at last. I should recommend horticulturists to call it Uredo Centauree, and they will not be very far from the truth."

Bulbiform Seed of Crinum.—Mr. Drury showed on behalf of Mr. Roupell a fine example of this curious condition. The seed was of the size of a small Apple, green and fleshy.

Leaf Galls, &c.—Mr. E. M. Holmes brought specimens which will be reported on later.

Red Spot on Leaves of Imantophyllum.—Mr. Saunders brought specimens showing red spots. It was stated that these spots sometimes followed on the attacks of the bulb-mite, and that they were connected with the presence of a yeast fungus (Saccharomyces).

Fasciation in Valeriana arizonica.—"In March last," writes Mr. Worthington Smith, "I received by post from Dr. Masters a specimen of Valeriana arizonica for illustration. The example was received in a flat and semi-dried state, and it had previously been received also by post from Mr. Henkel of Darmstadt, so the specimen may be truly said to have passed through some vicissitudes before I received it. The illustration is printed in the *Gardeners' Chronicle* for March 30, 1901. I planted the damaged and cut root-stock in very poor earth in a pot, and placed it under glass without heat, with the result that the old root-stock has now produced two new growths, both twice the size of the original plant, with leaves twice the normal length, all the parts fasciated in a remarkable manner and with flowers from two to three months in advance of the parent. Fasciation is sometimes put down to over-rich living and comfortable surroundings, but in this instance it seems to have been brought about by serious difficulties."

Cucumber Leaves.—From Mrs. BATTEN POOL came

specimens with the familiar signs of the presence of red-spider.

Grub in Roots of Peony.—Mr. CANNINGTON LEY, of Farleigh, sent, through Mr. Bunyard, Peony-roots eaten by the larva of some moth, which was pronounced to be a Swift-moth, *Hepialus*.

Cypripedium insigne variety.—Mr. TRACY, Amyand Park Road, Twickenham, sent a specimen which may be described as a dwarf or stunted flower, in which all the parts of the flower are normal, but much reduced in size. The plant produced flowers of the same character last year also. No information was given as to whether the whole plant was dwarfed, or only the flower.

Cypripedium insigne variety.—In this specimen, from Mr. PARR, Trent Park, New Barnet, there were two flowers, the topmost flower expanding first, the second flower developing from the axil of the bract which was developed as a perfect leaf. The parts of the flower were normal. M. T. M.

LINNEAN.

JANUARY 16.—Prof. S. H. VINES, F.R.S., President, in the Chair.

Mr. ALFRED O. WALKER, F.L.S., exhibited some branches of Cherry affected with a fungus disease caused by *Gnomonia erythrostoma*, and made the following remarks:—"In the autumn of 1900 certain varieties of Cherry were noticed in Kent to retain their leaves in a withered state at the time of the normal leaf-fall. They were examined by Mr. G. Massee, and the fungus causing the mischief was ascertained to be *Gnomonia erythrostoma*, Auerswald. The Royal Agricultural Society investigated the evil, and recommended that all the affected leaves should be stripped off and burned, to avoid future mischief. Although few growers did this, the crop of 1901 was exceedingly good. The immunity of the Cherry orchards from the menaced calamity was ascribed by the exhibitor to the comparatively equable temperatures and the small rainfall of the latter year, whilst the outbreak in 1900 was attributed to the extreme low temperatures in May, following abnormally high temperatures in April.

Mr. J. E. HARTING, F.L.S., exhibited some heads of wild sheep, together with photographs and lantern-slides, to illustrate a recent suggestion by Dr. George Wherry, of Cambridge, as to the use and value of spiral horns in feral species.

Dr. WHERRY pointed out that while the horns were enormous, the ears were remarkably short, situated exactly in the axis of the spiral, and, as it were, at the apex of a hollow cone formed by the great spiral horn. This he regarded as a provision of Nature to enable the animal to hear better, and to determine the direction of sounds when there is a mist or fog.

Mr. HARTING pointed out that the remarkably large spiral horns were peculiar to the male sex, and that if they were to be regarded as of use for the preservation of the species, the ewes, which required the most protection, would be in that respect defenceless. This would be especially the case with *Ovis nivicola*, the sexes of which, according to Dr. Guillemard (*Voyage of the "Marchesa,"* vol. i., p. 214), lived apart in small herds for some portion of the year. It was a significant fact, also, that wild sheep, like other wild animals, posted sentries whilst feeding to prevent being surprised by their enemies, and it was the experience of those who hunted them that when approached, the alarm was generally given by a ewe.

Rev. J. GERARD quoted a letter received from his brother, Lieut.-Gen. Sir Montagu Gerard, H.M. Commissioner for delimitation of the Pamir boundary with Russia, to the effect that he had seen skeletons of *Ovis Poli* which showed that the horns of two big rams had become interlocked whilst fighting, and that both animals had perished from their inability to disengage themselves.

Messrs. H. and J. GROVES read a paper on "The Use of Linnean Specific Names." They showed that great diversity of practice existed in dealing with these names, and pointed out the necessity of arriving at some agreement as to their use as a first step towards uniformity in nomenclature.

A paper by Messrs. W. B. HEMSLEY, F.R.S., F.L.S., and H. H. W. PEARSON, M.A., F.L.S., was read, entitled "The Flora of Tibet or High Asia, being a consolidated account of the various Tibetan Botanical Collections in the Herbarium of the Royal Gardens, Kew."

THE HIGHGATE AND DISTRICT CHRYSANTHEMUM.

JANUARY 22.—The annual general meeting of this Society was held on the above date, the President, Mr. C. F. Cory-Wright, J.P., D.L., presiding, and was supported by a good attendance of members. The Treasurer (Mr. J. McKerchar) submitted the financial statement for 1901, which showed the Society in a solvent condition. The election of officers then took place, and resulted as follows:—President, the Rt. Hon. the Earl of Mansfield, proposed by Mr. Cory-Wright, who stated that Lord Mansfield had intimated his

intention of attending the Alexandra Palace on Oct. 29 to open the Society's exhibition, and preside at the annual dinner of the Society to be held there the same evening; he would also give £20 towards the prize fund.

JANUARY 30.—At a committee meeting held on the above date fifty-three new members were elected. The committee agreed to insert three classes, open to growers all over the country, to be called Special Coronation Classes, one to be for twelve vases of Japanese blooms, five blooms in each, prizes to consist of a silver cup, money, and medals; another to be for six vases of incurved blooms, five blooms in each; and the other, which is to be made a leading feature of the exhibition, that of a floral display of Chrysanthemums, which must include Japanese, incurved, reflexed, and Pompons, to be exhibited in pots or bottles, with Ferns, grasses and other foliage, in an oval space of 20 ft. by 14 ft. Prizes: 1st prize, £10 10s. and silver-gilt medal; 2nd, £7 7s. and silver medal; 3rd, £1 4s. and bronze medal; 4th, £2 2s. and bronze medal. Nothing in this exhibit to exceed 4 ft. in height.

CHISWICK GARDENERS' MUTUAL IMPROVEMENT.

JANUARY 23.—A very good attendance of members assembled on the above date to hear Mr. OSBORN, of Kew Gardens, read an interesting and instructive paper on "Ferns, their General Cultivation and known Genera." The paper was well thought out, and based on thorough practical experience, and traced Ferns from remote geological times, the introduction of exotic species by Tradescant in 1628, to those now in general cultivation. Suitable soils were noted, and special attention drawn to the fact that experience now shows that more light and less heat, with proper ventilation, suit this class of plants better than the closer, darker conditions prevalent a few decades since, when the subject was not so well understood.

Methods of reproduction noticed were by spores, division of root-stocks, rhizomes, and bulbils; and it was recommended that spores should be started as soon as dry after being gathered, for keeping generally proves unsatisfactory as regards subsequent germination.

After mentioning many interesting species worth cultivating of the various genera, a discussion was opened by Mr. M. T. Dawe, who divided his remarks into two heads, (1) botanical, (2) horticultural, and spoke for some length on both, and gave some interesting experiences of their cultivation. Messrs. Mallinson, Sillitoe, Ball, and Prince also spoke. Mr. T. Humphreys occupied the chair. C. H. Buck, Hon. Sec.

READING & DISTRICT GARDENERS' MUTUAL IMPROVEMENT.

JANUARY 27.—During the past month three meetings have been held in connection with the above association. The annual meeting took place on the above date, when the Report and Balance-sheet presented to the members proved that the Association during 1901 had experienced a flourishing year in regard to the attendance, the number of members, and also financially. The first ordinary meeting of the new year took place on the 27th, when Mr. E. Fry, gr., Greenlands, Reading, read a paper called "A Chat on the Kitchen Garden."

DEVON AND EXETER GARDENERS'.

"The Chrysanthemum as a Cottager's Plant" was the subject of a suggestive paper read before the Association by Mr. G. C. CHABUE, Prospect Park, Exeter, a well-known amateur member of the Association.

The essayist introduced his subject by saying that what he meant by treating the favourite autumn flower as a cottager's plant, was that as a class it required less care in its cultivation, less expense in growing, and which was so hardy that it could be grown to comparative perfection without the aid of glass or artificial protection. It was quite practicable to strike the cuttings in the open by placing some light, sandy soil in a sunny border, placing the framework of a grocer's box upon it, after having knocked the bottom out of the box, covering with loose squares of glass, and protecting with a bit of canvas or sacking of any kind.

The cuttings should be dibbled in about 3 inches apart. After about three days (?) the cuttings should have calloused, when light should gradually be given and in about three weeks give more and more air by removing the glass bit by bit, always taking care to exclude frost or excessive damp at night. A dusting of flowers-of-sulphur will keep away mildew, and a mulching of dung round the sides of the box will engender sufficient warmth. A southern, south-western, or south-eastern aspect is best, and one that is not overshadowed by a tall hedge, or anything of that nature.

A light soil is essential in raising the cuttings. When large enough to be put out, each plant, 4 feet apart, should have a little pit to itself, about 12 inches deep,

with 4 inches of broken crocks in the bottom. Oyster-shells would serve the same purpose. Place prepared compost on the top of them, and set your plants in that. A piece of wire netting 3 ft. 6 ins. wide, stood on end, cylinder fashion, makes a good support; and if sticks be preferred, let them be natural ones, with their bark on. Stopping should never be continued after Lady-day. (Several members demurred at this date, saying it was altogether too early, the consensus of opinion of the members present being that May was the better time to make the final stopping.)

Mr. Crabbe then dealt with feeding by liquid-manure, and the various remedies against insects. He recommended careful disbudding to get some of the flowers larger, especially picking off the crown bloom-bud as soon as it is fairly developed. When the plants have finished flowering, do not be in a hurry to cut down the old stems, but give a mulching of stable-manure or ashes, to induce the sending up of suckers for flowering the following year. The essayist then gave a selection of twenty-four sorts which he could recommend, giving their height and time of flowering.

A bunch of blooms, cut from the open ground near Exeter on January 29, was placed on the table by a member, the variety being Earl Canning. A. H.

NATIONAL CHRYSANTHEMUM.

(ANNUAL MEETING.)

FEBRUARY 3.—The annual General Meeting of this Society took place on Monday evening last, at Carr's Restaurant, Strand. The new President, Sir ALBERT K. ROLLITT, M.P., presided, and there were about eighty members present.

REPORT OF THE EXECUTIVE COMMITTEE.

Sir ALBERT ROLLITT in moving the adoption of the Report, associated himself with the sentiments of the opening paragraph, which expresses the Society's "deep sense of loss" through the death of Sir Edwin Saunders in March last. The report goes on to say that in memory of the late President, it has been decided to institute a Sir Edwin Saunders Memorial Gold Medal. The members are congratulated upon the quality of the exhibitions held in 1901, and are assured by the committee that "there are no indications that the Chrysanthemum has ceased to be in any degree a popular exhibition flower." During the past season the Floral Committee has awarded twenty-three First-class Certificates of Merit and four Awards of Merit to new varieties of Chrysanthemums, and the Classification Committee has continued its work of classifying doubtful varieties. The schedules of prizes have been modified a little, but no increase has been made in the sum of money offered. Reference is made to the annual outing of the Society, when a visit was made to the interesting garden of Mr. Alfred Tate, near Leatherhead, and incidentally to the gardens at Cherley Court. A contract has been made to hold the Society's exhibitions at the Royal Aquarium for the next three years. The present number of societies affiliated is 139, and the number of members 708. "The Society has had to experience during the past two years a somewhat serious loss of members, as also of affiliated societies." The report concludes with an expression of thanks to the donors of special prizes, including Sir Albert Rollitt, who has consented to continue the special 1st prize of £15 given by the late President in 1901. After Sir Albert Rollitt had referred to some of the items in the report, and to the services rendered by Mr. R. Dean, he formally moved that the report be adopted, and this was seconded by Mr. Thos. Bevan; and excepting an incident in respect to the privileges of delegates, which will be referred to presently, the report was accepted unanimously, and without discussion.

THE BALANCE SHEET.

The principal items in the receipts were annual subscriptions, £230 9s.; donations and special prizes, £127 9s. 6d.; from the Royal Aquarium Company, £375; rent of space, £31 3s. 6d.; affiliation fees, £58 5s. 6d.; and medals, &c., affiliated societies, £36 1s.—the total receipts were £1,111 5s. 2d. On the expenditure side, £497 was given in prizes, £56 13s. 3d. expended upon printing and stationery, £189 12s. 9d. upon medals and engraving, £69 18s. 6d. upon show expenses, £100 Secretary's salary, and £31 15s. 9d. upon postage and registration. There is a balance at the bank of £41 12s. 4d., and if this be subtracted from £87 7s. 4d. brought forward from the preceding year, a loss of over £40 during 1901 is shown. The balance-sheet was, however, accepted without discussion, if we except Mr. Bevan's question in respect to the carrying out of suggestions made by the auditors, one of which was that the Chairman of the Finance Committee should be required to sign all accounts.

ELECTION OF OFFICERS.

Sir Albert K. Rollitt, M.P., was unanimously elected President for the coming year; Mr. J. W. Moorman was re-elected Treasurer, Mr. Thos. Bevan Chairman of the Executive Committee, Mr. Witty Vice-Chairman, Mr. C. Harman Payne Foreign Corresponding Secretary, and Mr. R. Dean General Secretary. One of the Auditors, Mr. W. Seward, having served two years, has been succeeded by Mr. G. J. Ingram. From various reasons the following gentlemen have ceased to serve upon the Executive Committee: Messrs. C. Blick, W. Davey, E. Dove, C. Gibson, Geo. Cuthbert, W. Logan, T. G. Swales, and W. Owen. Eight of the retiring members were re-elected, and the following new ones: George Prickett, James Tyler, A. E. Stubbs, Geo. Little, C. H. Curtis, J. Jones, — Tapper, and — Hawes.

AMENDMENTS TO RULES.

Mr. Young, a delegate from an affiliated society, said that he had given notice to the General Secretary of an amendment to a rule governing the privileges of delegates, but it had not been put upon the Agenda. The Secretary explained that this was not done because he, the General Secretary, thought that delegates had not power to move such amendments. The President, however, after considering Rules IV., IX., and XIX., ruled that they have, and regretted that Mr. Young's intended amendment could not be proposed that evening because notice had not been given by the Secretary in the Agenda.

Mr. R. Dean moved that in Rule III.—

After "the management of the Society shall be vested in the Officers of the Society, viz., a President, Vice-Presidents, Treasurer, Chairman, and Vice-Chairman of the Executive Committee," add "General Secretary and;" also line 6 after "the President, Treasurer, Chairman, Vice-Chairman," add "General Secretary."

Mr. Dean, who described his position in the Society as equivalent to that of a "managing director," has evidently resented the deprivation three years ago of his privilege to vote upon the committees. He made an earnest appeal to the members to restore to him the privileges of a member, albeit he is paid a salary by the Society. The resolution was carried unanimously.

Mr. J. McKerchar then proposed, and Mr. J. T. Simpson seconded, that the following addition be made to Rule XIV., that:—"The officers of the Society and the elected members of the committee are disqualified for nomination or election as judges."

Mr. McKerchar was supported by Mr. W. Mease, Mr. Lake, Mr. Dean, and others, but was opposed by several speakers, most of them members of the committee. In the end, this desirable amendment was rejected by a majority of about two to one.

IRISH GARDENERS' ASSOCIATION.

ADDRESS BY THE PRESIDENT.

A MEETING of the members of the Irish Gardeners' Association and Benevolent Society was held on Jan. 28, 1902, in the N. L. Café, Grafton Street. Mr. F. W. BRUNNICE, M.A., President of the Association, occupied the chair, and there was a large attendance.

The Chairman, in the course of an interesting address, referred to the condition of gardeners generally, and contrasted the difference between gardeners who were employed close to large cities, and those who resided in the country districts. Passing on to speak of the different classes of employers, he said the ideal employer was a gentleman or lady who knew something of gardening themselves. There were others who did not in the least know what they wanted, but were determined to have it. They were uncertain themselves, and worried their gardeners in many ways. No one garden could have everything of the finest and best. Then there was often a plurality of employers, and a gardener who got amongst people at cross-purposes required a good deal of balance and backbone, and a good temper to boot. Some gardeners that he knew did their duty under irritating conditions of this kind so well, that they were really worthy of promotion into the diplomatic service of their country. The fact was, that many gardeners showed quite as much tact and ability in managing discordant people as they did in the culture of good fruit and flowers (applause). He was a great admirer and sympathiser with the present and the future lady gardener, but he pitied them when he looked round and saw what multifarious duties many "mere men" gardeners had to perform. Managing a garden and the things it contained was often a mere fraction of what the so-called gardener had to do. He was often a bailiff, at times a forester, had to keep an eye on the river and deter poachers from lifting the salmon; he must be a cattle doctor, and an engineer at times, levelling, drawing, taking out quantities, and calculating the cost of work. He (the Chairman) knew at least two most able gardeners near Dublin, who not only managed good gardens and the home farms, but also ran the electric light plant. So the lady gardener would have to learn a good deal more than mere garden craft, or work amongst the flowers, if she were to

succeed, for a gardener's work was practically unlimited. A gardener had to learn many things, but of all things he should know something of logic, or the science of clear and accurate thought. He especially recommended to the rising race of young gardeners the study of Prof. Jevon's *Primer of Logic*, and his companion volume on *Political Economy*, both of which were invaluable to a young man. To these should be added Mr. John Wright's *Primer of Horticulture*, which dealt with the first principles of gardening in a clear and efficient manner. Every gardener should also learn to draw anything to scale, and to make a sketch of anything he wished to remember. To be able to show things by means of a rough sketch or by a working drawing was often a great gain. Every gardener should have some speciality of his own. He should take up some plant, or group of plants, something preferably not attempted before, and try to improve it either for food, or for that delightful mental food called beauty. He should select, cross fertilise, or hybridise it, and so do his best to improve it in every possible way. Look what Burpee and Eckford had done for the Sweet Pea, or Engleheart and others for the Narcissus, and Laxton, father and son, for the culinary Pea and for the Strawberry. To come nearer home, let them look at what Mr. Campbell, of St. Ann's had done for the Chinese Primrose, the Japanese Anemone, the Persian Cyclamen, or the Carnation. Only want something, then work for it, and in the end they would gain their heart's desire. The successful gardener, like the successful doctor, was he who was best able to apply to his own business the discoveries that were being made by the great army of accurate observers, who were labouring on his behalf. The only secret in successful gardening was close observation and practical experience. Some gardeners spent the greater part of their lifetime out of a place, while others were rarely out of a situation. He would suggest that a registry for duly accredited gardeners should be kept and worked by the Association for all men who were well recommended, but especially, of course, for their own members. The organisation and registration of labour was especially necessary for gardeners, as so many of them were isolated. He did not propose anything like a trades union, but merely a central combination and a system of co-operation for their mutual good (applause). It would well repay the gardeners of Ireland to combine and join this Association, and subscribe sufficient to pay a registration secretary, who would devote his time and ability to look after their best interests in every possible way. But, after all was said and done, the gardener had really much to be thankful for. Every good gardener took a great and just pride in his work, and in most cases he ought to feel grateful that his work was carried on in pleasant places, and amid healthy and beautiful surroundings. His work was his very own, and he was right to feel proud of it. Now that they had an Agricultural and Technical Department in Ireland, he hoped that amongst other things, it would do much to avoid too much centralisation of industries in towns, and to revive local and village industries, and that the old-time emulation in good work would be re-established on or in connection with the land in this country. The revival of village industries and the cheapening of railway and other transit charges for raw materials and finished products might, he believed, not only relieve the congestion of half or totally unemployed labourers in towns, but it would restrict the exodus from this beautiful and fertile land of the best and strongest of their population, who at present became downhearted, and left them in desperation for the United States of America, or for other and often far less hospitable and kindly shores.

Afterwards a lecture on "Nitrate in the Garden" was delivered by Mr. John Simpson. The lecture, which was illustrated by a number of limelight views described in detail the results of the experiments carried out by the Permanent Nitrate Committee, and the lecturer claimed that in nitrate of soda, science had provided the gardener with nitrogen in the exact form adapted to the wants of the plant, whether in the orchard, the kitchen garden, the flower-bed, or the greenhouse. *The Daily Express, Dublin, January 29, 1902.*

CHESTER PAXTON.

CHESHIRE ORCHARDS.

THIS was the subject dealt with at the usual fortnightly meeting of the Paxton Society, held on Saturday last, under the chairmanship of Mr. Robt. Wakefield. Mr. John Taylor, of Hoole, gave a carefully prepared paper, and afforded some valuable hints, the outcome of long experience and careful observation. Mr. Taylor assured his audience that the County of Chester was as capable of producing good fruit as any other part of England; and this statement was fully borne out by the excellent examples of local-grown Apples and Pears exhibited at the meeting. An animated discussion followed the reading of the paper, in which the President (Mr. John Weaver) and others took part.

PUBLICATIONS RECEIVED.—*Journal of the Department of Agriculture of Western Australia*. December, 1901. Includes: Talks on Manures, Prevalent Blights, Red-Pear Mite, Importation of Indian Oranges, Lime and its Application to the Soil, &c.,—*Santa Barbara*, by C. A. Moody (illustrated). Reprinted from November, 1901, "Land of Sunshine," Los Angeles, Cal.—From the University of California. College of Agriculture, Agricultural Experiment Station. E. W. Hilgard, Director: Bulletins No. 131, *Phylloxera of the Vine*, by F. T. Bioletti; No. 133, *Tolerance of Alkali by various Cultures*, by R. H. Loughridge; No. 134, *Report on Condition of Vineyards in Portions of Santa Clara Valley*, by F. T. Bioletti and E. H. Twight; No. 135, *The Potato-worm in California*, by Warren T. Clarke; No. 136, *Eriose of the Vine*, by F. T. Bioletti and E. H. Twight.—From the Blue Hill Nurseries, South Braintree, Mass., U.S.A.: *Price List of Hardy Herbaceous Perennials and Alpine Plants*, grown by Julius Hentlin.—*Hobbies Garden Guide*. 1902 (Dereham, Norfolk). A catalogue containing much useful information.—*Le Mots Scientifiques*. Janvier (Librairie J. B. Ballière et Fils, 19, Rue Hautefeuille, Paris.—*The Irish Gardener*, 11, Fleet Street, Dublin), January 11 and January 18.—*Annual Report on Government Gardens and Parks in Mysore*, for the year 1900—1901, with the Government Review thereon:—"Government have read Mr. Cameron's report with much interest, and are gratified at the increasing popularity and usefulness of the gardens under his charge. It is satisfactory to note that attention is being paid to the cultivation of *Paspalum dilatatum* (new fodder grass), Florida Velvet Bean, Rubber-trees, and other plants yielding useful products."

MARKETS.

COVENT GARDEN, FEBRUARY 6.

[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 revise the list, and 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 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.]

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

| s.d. s.d. | s.d. s.d. |
|---|--|
| Asparagus 'Fern', bunch... 1 6-2 6 | Lily of Valley, p. doz. bunches 9 0-10 0 |
| Carnations, per dozen blooms 1 0-2 0 | Maidenhair Fern, doz. bunches 4 0-8 0 |
| Cattleyas, p. doz. 9 0-12 0 | Mignonette, per doz. bunches 4 0-8 0 |
| Eucharis, p. doz. 4 0-6 0 | Odontoglossums, per dozen 2 6-6 0 |
| Gardenias, doz. 1 6-2 0 | Roses, Tea, white, per dozen 1 0-3 0 |
| Lilium Harrisii, dozen blooms 5 0-8 0 | — Catherine Mermet, per doz. 2 0-5 0 |
| Lilium lancifolium, album, p. doz. blooms 3 0-4 0 | Smilax, p. bunch 3 0-5 0 |
| Lilium rubrum, per dozen 3 0-5 0 | Tuberose, per doz. blooms 0 4-0 8 |
| Lilium longifolium, per dozen 5 0-8 0 | |

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| s.d. s.d. | s.d. s.d. |
|---------------------------------------|---------------------------------------|
| Adiantums, doz. 5 0-7 0 | Ferns, small, per 100 4 0-8 0 |
| Arbor-vitæ, var., per dozen 8 0-38 0 | Ficus elastica, ea. 1 6-7 6 |
| Aspidistras, doz. 18 0-38 0 | Foliage plants, various, each 1 0-5 0 |
| — specimen, ea. 5 0-10 0 | Lily of Valley, ea. 1 9-3 0 |
| Cannas, per doz. 18 0-— | Lycopodiums, p. dozen 3 0-4 0 |
| Crotons, per doz. 18 0-30 0 | Marguerites, per dozen 8 0-12 0 |
| Cyclamen, p. doz. 8 0-10 0 | Myrtles, per doz. 8 0-9 0 |
| Dracenas, var., per dozen 12 0-30 0 | Palms, var., each 1 0-15 0 |
| — viridis, doz. 9 0-18 0 | — specimen, ea. 21 0-63 0 |
| Ericas, var., doz. 12 0-38 0 | Pelargoniums, scarlet, doz. 8 0-12 0 |
| Euonymus, var., per dozen 8 0-18 0 | — ivyleaf, per dozen 8 0-10 0 |
| Evergreens, var., per dozen 4 0-18 0 | Spiræas, per doz. 8 0-12 0 |
| Ferns, in variety, per dozen 4 0-18 0 | |

FRUIT.—AVERAGE WHOLESALE PRICES.

| s.d. s.d. | s.d. s.d. |
|---|--|
| Apples, home-grown, Wellingtons, per bushel... 6 0-10 0 | Custard Apples, per dozen 6 0-10 0 |
| — Californian, cases 9 0-12 0 | Grapes, Gros Colmar, a. p. lb. 2 0-2 6 |
| — Blenheim's, &c., p. bushel 5 0-8 0 | — B., per lb. 1 6-— |
| — Nova Scotian, various, p. bl. 21 0-26 0 | — Alicante, lb. 1 3-2 0 |
| — King Pippins, per bushel 5 0-7 0 | — Almeida, per 12 lb. 5 0-6 0 |
| — Large Cookers, per bushel 13 0-— | — per barrel 14 0-15 6 |
| Bananas, bunch 6 0-10 0 | Lemons, per case 5 6-10 6 |
| — loose, p. doz. 1 0-1 6 | Oranges, Denia, per case 10 0-18 0 |
| Cape Fruits— | — Jaffa, per case 13 0-17 0 |
| — Apricots, cases 6 0-10 0 | — Jamaica, per case 12 8-— |
| — Peaches, 6 0-9 0 | — Navel, per case 13 0-14 0 |
| — Plums 4 0-10 0 | — Tangierine, per case 0 10-8 6 |
| Chestnuts, per bag 7 0-14 0 | Pears, Easter Beurré, in half cases 12 0-— |
| Cobnuts, Kentish, per lb. 0 11-1 0 | Pines, each 1 9-3 3 |
| Cranberries, case 9 0-10 6 | Sapucaia Nuts, lb. 1 3-— |
| — quart 0 8-— | Walnuts, per bag 3 0-4 0 |

VEGETABLES.—AVERAGE WHOLESALE PRICES.

| s.d. s.d. | s.d. s.d. |
|--------------------------------------|---------------------------------------|
| Artichokes, Globe, per dozen 3 0 3 6 | Mushrooms, house, per lb. 0 8-0 10 |
| — Jerusalem, p. sieve 1 0-1 6 | Onions, case 8 0-8 6 |
| Asparagus Sprue, bundle 0 9-— | — English, per cwt. 7 0-7 8 |
| — English 8 0-— | — in bags 5 8-6 0 |
| — Paris Green 5 6-— | — picklers, per sieve 2 0-3 0 |
| — Spanish 2 9-— | Parsley, per doz. bunches 1 6-2 0 |
| Barbade Capucine, bundle 0 3-— | — sieve 4 0-— |
| Beans, dwi., house, per lb. 2 6-3 0 | Parsnips, p. cwt. 2 6-3 3 |
| — Madeira, per basket 2 6-3 0 | Potatoes, per ton 50 0-90 0 |
| Beetroots, per bushel 1 3-1 6 | — new, per lb. 0 3 1-0 4 |
| Brussels Sprouts, sieve 1 9-2 3 | — Frame, lb. 0 8-— |
| Cabbage, tally 4 0-— | — new Tenerife, per cwt. 10 0-14 0 |
| — dozen 0 9-1 0 | Radishes, p. doz. bunches 0 9-1 9 |
| Carrots, per doz. bunches 3 0-3 6 | Rhubarb, Yorks, per dozen 1 2-1 4 |
| — washed, bags 2 6-3 6 | Salad, small, punnets, per doz. 1 3-— |
| — unwashed, per bag 2 0-— | Salsify, per doz. bundles 7 0-— |
| Cauliflowers, doz. 3 0-— | Savoys, tally 3 0-8 0 |
| — tally 5 0-10 0 | Seakale, per doz. punts 11 0-13 0 |
| Celeriac, per doz. 2 6-— | Shallots, per lb. 0 2-— |
| Celery, 12 bunches 10 0-16 0 | Spinach, English, bushel 4 0-— |
| Chicory, per lb. 0 3-— | — Stachys, lb. 0 4-— |
| Cress, per dozen punnets 1 3-— | Tomatoes, Canary, boxes 3 6-4 6 |
| Cucumbers, doz. 10 0-19 0 | Turnip-Tops, per bushel 2 0-— |
| Endive, new French, doz. 2 0-2 6 | — bag 1 6-2 0 |
| Garlic, per lb. 0 3-— | Turnips, per doz. bunches 2 0-2 6 |
| Horseradish, foreign, bunch 1 0-1 6 | — bag 1 6-2 6 |
| Leeks, 12 bunches 2 0-— | Watercress, per doz. bunches 0 6-0 8 |
| Lettuces, Cabbage, per dozen 0 9-1 6 | |
| Mint, new bunch 0 4-0 6 | |

Potatoes, Dunbar, main crop, 90/-; Up-to-Date, 80/- to 85/-; Bloods, 45/-; Various, 50/- to 80/-.

SEEDS.

LONDON: February 5.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report to-day's market thusly attended. There is now a fair seasonable all-round inquiry for field seeds. Choice samples of white Clover seed have become exceedingly scarce, and for these the late unprecedented rise is well sustained. Red seed is, however, rather quiet, and low, and even medium qualities are not readily placed. Full prices meantime are asked for Alsikes, Trefoils, and Rye-grasses. Lucerne and Timothy continue in short supply, and command high rates. There is this week no quotable variation in either Mustard, Rape, or Linseed. Tares are in improved request at currencies favourable to sellers. Bird seeds are just now neglected. For Peas, Haricots, and Lentils, the sale is small, at former figures. The low terms on which Scarlet and White Runners are now obtainable attract attention.

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending February 1, 1902, and for the corresponding period of 1901, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

| Description. | 1901. | 1902. | Difference. |
|---------------|------------|------------|-------------|
| Wheat | s. d. 26 7 | s. d. 27 4 | + 0 9 |
| Barley | 25 7 | 26 7 | + 1 0 |
| Oats | 17 8 | 20 2 | + 2 6 |

FRUITS AND VEGETABLES.

GLASGOW, February 5.—The following are the averages of the prices during the past week:—Apples, Californian, 8s. 6d. to 1s. 6d. per case; Oregon, 12s. to 13s. 6d.; Nova Scotia Baldwins, 22s. to 24s. per barrel; Maine, 20s. to 24s. 6d.; Canadian, 23s. to 26s. 6d.; Oranges, Valencia, ordinary, 42s. 6d. to 4s. per box; do., large 42s. 6d. to 10s. 6d.; extra large do., 10s. 6d. to 12s. 6d. do.; large 74s. 6d. to 8s. 6d. do.; Jaffa, 12s. to 13s. 6d.; Grapes, 1s. to 2s. 6d. per lb.; Mushrooms, 1s. do.; Onions, Valencia, 5s. 9d. to 10s. per case; do., Globe do., 8s. 6d. do.; Dutch 6s. 6d. do.

LIVERPOOL: February 5.—*Wholesale Vegetable Market*.—Potatoes, per cwt.: Up-to-Date, 2s. 3d. to 2s. 9d.; Main Crop, 3s. to 4s.; Lynn Grays, 2s. to 2s. 6d.; Bruce, 2s. 3d. to 2s. 9d.; Turnips, 8d. to 1s. per 12 bunches; Swedes, 1s. 4d. to 1s. 6d. per cwt.; Carrots, 3s. to 4s. do.; Onions, foreign, 5s. 6d. to 6s. 6d. per cwt.; Cauliflowers, 1s. to 2s. 6d. per dozen; Cabbages, 8d. to 1s. 9d. do.; Celery, 8d. to 1s. 6d. do. *St. Johns*: Potatoes, 1s. to 1s. 2d. per peck; do., new, 6d. per lb.; Grapes, English, 2s. to 2s. 6d. per lb.; do., foreign, 1d. to 6d. do.; Apples, 2d. to 4d. per lb.; Tomatoes, 6d. do.; Asparagus, 1s. per bundle; Mushrooms, 1s. 4d. per lb. *Birkenhead*: Potatoes, 10d. to 1s. per peck; Grapes, English, 1s. 6d. to 3s. 6d. per lb.; do., foreign, 4d. to 8d. do.; Mushrooms, 1s. to 1s. 6d. per lb.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period January 26 to February 1, 1902. Height above sea-level 24 feet.

| 1902. | | DIRECTION OF WIND. | TEMPERATURE OF THE AIR. | | | | TEMPERATURE OF THE SOIL at 9 A.M. | | | | |
|---------------------------------|-----------|--------------------|-------------------------|--------|-----------|-----------------|-----------------------------------|-----------------|------------------------------|-----------|------|
| JANUARY 26 TO FEBRUARY 1. | At 9 A.M. | | DAY. | NIGHT. | RAINFALL. | At 1-foot deep. | At 2-feet deep. | At 4-feet deep. | LOWEST TEMPERATURE ON GRASS. | | |
| | Dry Bulb. | | | | | | | | | Wet Bulb. | |
| | Highest. | | | | | | | | | Lowest. | |
| SUN. 26 | S.W. | deg. | 34 0 | 32 6 | 34 6 | 31 8 | 0 18 | 38 5 | 43 0 | 45 0 | 23 2 |
| MON. 27 | S.W. | deg. | 39 8 | 39 5 | 47 8 | 31 8 | ... | 38 1 | 42 0 | 45 0 | 31 8 |
| TUES. 28 | W.S.W. | deg. | 40 7 | 38 6 | 45 4 | 39 5 | ... | 39 9 | 42 0 | 44 9 | 32 0 |
| WED. 29 | N.N.W. | deg. | 32 0 | 28 2 | 38 1 | 29 5 | ... | 38 9 | 42 2 | 44 8 | 22 9 |
| THU. 30 | N. | deg. | 32 2 | 31 7 | 38 1 | 29 5 | 0 03 | 37 2 | 41 5 | 44 7 | 24 1 |
| FRI. 31 | N.E. | deg. | 36 7 | 34 5 | 37 2 | 33 0 | ... | 36 4 | 41 0 | 44 5 | 25 6 |
| SAT. 1 | E.N.E. | deg. | 34 4 | 32 3 | 34 0 | 32 3 | ... | 36 2 | 40 5 | 44 3 | 26 4 |
| MEANS | ... | deg. | 35 7 | 33 9 | 40 0 | 32 5 | 0 21 | 37 9 | 41 7 | 44 7 | 26 5 |

Remarks.—The weather continued dull and very cold. There were heavy gales of wind from the north-east at the end of the week.

GENERAL OBSERVATIONS.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending Feb. 1, is furnished from the Meteorological Office:—

"The weather was unsettled during the early part of the week, with snow in the north, and cold rain, sleet, or snow elsewhere. Later on, however, the conditions improved greatly, and clear skies became general, and the air very dry and keen.

"The temperature was below the mean in all parts of the Kingdom; over England and Ireland the deficit ranged from 3° to 5°, and in the Channel Islands it was only 2°, but in Scotland it was unusually large, varying from 9° in the west to as much as 12° in the north. The highest of the maxima occurred during the earlier days of the week in the English and Irish districts, but towards its close in Scotland. They ranged from 51° in England, S., the Channel Islands; and Ireland, S., to 41° in Scotland, E. At several Scotch stations the daily maxima were sometimes below 32°, and at For. William on Thursday the thermometer did not exceed 22°. The absolute minima, which were mostly registered during the latter half of the week, were as low as 2° in Scotland, N. and E., and 15° in Scotland, W.; elsewhere they ranged from 16° in England, N.W., and 17° in England, N.E., to 20° in Ireland, N., 25° in England, E. and S., and to 32° in the Channel Islands.

"The rainfall was less than the mean in nearly all districts, but just equalled it in England, S.W., and slightly exceeded it in the Channel Islands.

"The bright sunshine was (after the first few days) very prevalent, and greatly exceeded the normal amount. The percentage of the possible duration ranged from 49 in England, E., 48 in England, S.W., and 47 in England, S., to 41 in the Midland Counties, 38 in Scotland, W., and 32 in Scotland, E."

THE WEATHER IN WEST HERTS.

A cold and sunny week, with searching northerly winds and some snow. On the coldest day the temperature in the screen at no time rose more than 1° above the freezing-point, but on the coldest night the exposed thermometer only registered 11° of frost. The ground at 2 feet deep is at the present time 2° colder, and at 1 foot deep 3° colder than is seasonable. On these days snow fell, and on the morning of the 4th the ground was covered to the depth of 3-inch. Throughout the evening of the 2nd, and also afterwards during the night, there occurred a fall of very fine sleet and rain, which froze on reaching the ground, thus causing a thin coating of ice to be formed upon it, and making the roads and pathways extremely slippery. This phenomenon, which is of comparatively rare occurrence, is known as a "glazed frost" or "silver thaw." There has been no measurable percolation through either of the soil gauges since the month began. On the first five days of the week the sun shone on an average for nearly five hours a day, but since then there has been no record of sunshine.

During the four days ending the 2nd, the mean velocity of the wind was 9 miles an hour, and the direction some point between north and east. Throughout the greater part of the week, the small amount of moisture in the air has been a noteworthy feature. Iris *Holstro* came first into flower on the 11th, which is a fortnight later than last year.

JANUARY.

This was a very warm January, and the fifth warm one in succession. At no time was there any exceptional heat or cold. The lowest reading indicated by the exposed thermometer was 17° of frost. Very little rain fell, indeed, less than one-third the average quantity for the month. Snow fell on two days, but on no occasion was there sufficient to cover the ground. The sun shone on an average for 1½ hours a day, which is a remarkably good record for January. The winds were, as a rule, high, and came principally from some westerly point of the compass. The atmosphere remained exceptionally dry, in fact, drier than in any January of which I have here any record.

THE RAINFALL FOR THE LAST FOUR MONTHS.

The total rainfall since the winter half of the drainage year began in October, comes short of the average for the same four months in the last forty-six years by 2½ inches, which is equivalent to a loss of over 12 gallons of rain-water on each square yard of surface in this district.—E. M., *Berkhamsted*, Feb. 4, 1902.

ANSWERS TO CORRESPONDENTS.

ADVERTISING FOR SITUATIONS IN GARDENING PAPERS IN CANADA AND U. S. A.: W. B. Had you read your *Gardeners' Chronicle* with due attention, your question would have been superfluous. See issue for Jan. 25 this year, p. 68.

AZALEA INDICA AND VIOLETS: J. W. B. The first have been infested by thrips, which have sucked the juices of the leaves, and caused their fall from the shoots; and the last were infested by red-spider whilst out-of-doors last year, with the result that the plants have been checked in growth, and they are not likely to flower satisfactorily. Azaleas should be frequently fumigated whilst under glass, and dipped in an insecticide once or twice whilst they remain out-of-doors in late summer and autumn, and occasionally be turned on their side and heavily syringed, more especially directing the water against the under-sides of the leaves. Violets should be placed in half-shady situations, the ground kept moist, and the under-sides of the foliage wetted frequently with an elbowed nozzle of a syringe.

CAMELLIA SCALE: H. R. M. *Aspidiotus Camelliae*. Remove by sponging and brushing with Gishurst Compound Soap used at the rate of 2 oz. to one gallon of water, spreading a cloth on the soil under the plants so as to capture all insects that may fall from the leaves, and putting them into the fire.

CAUSTIC SODA DRESSING: *Ignoramus*. This might do harm to vegetable crops growing beneath the trees.

CLUBBING IN BRASSICAS: W. W. The best cure is a total change of crop for at the least seven years, and dressings of lime and potash; the fungus *Plasmodiophora brassicae* is favoured by acids and checked by alkalis, and farmyard manures should not be applied, more especially if oxen have been fed on infected Turnips and Swedes.

CREOSOTED WOODEN STAGING: W. J. S. G. If your plants are certainly being injured by the fumes, you cannot do better than remove the staging, or leave the glasshouse unoccupied for a few months. Doubtless less injury will result to the plants when more air can be afforded than is possible at the winter season.

"DUST" ON CABBAGE-LEAVES, &c.: G. H. M. The spores of a fungus—*Puccinia* sps.

EMPLOYMENT IN KEW GARDENS: *Barnsley*. By making application to the Director, who will furnish you with a form to be filled up.

LABOURER'S NOTICE: E. R. No notice would be required if the man was engaged as a day labourer. The matter turns upon the terms of the engagement.

MAIDEN APPLE AND PLUM-TREES: N. T. P. The better method is not to cut back all of the lateral shoots on stems, but to leave four to six at full length, and remove the others entirely, leaving no snags. The few that are left for a year or two will strengthen the stems, and their removal will result in but few scars. At 6 feet, or a greater height if desired, the stems should be stopped, and half a dozen good shoots secured for forming the basis of a crown. The method of pruning differs if the bush form of tree is desired. The plants set out this season should be allowed to stand for the entire period till October unpruned, when the stems should be cut back to within 6 to 8 inches of the graft; and when they break in the spring following, the shoots should be reduced to four to six of the strongest. No other shoots should be allowed to form the first year.

MARKET TERMS: H. L. H. Per dozen bunches must be taken literally, although the number of roots in a bunch may differ considerably according to the kind of vegetable, root, &c. Seakale punnets measure 8 inches in diameter at the top, and 7½ inches at the bottom, and 2 inches deep. The number of Seakale heads going in a punnet will depend upon the size of the heads. A "tally" is not a measure of a weight, but of number, viz., 60.

MULBERRY-TREE FLOWERING BUT NOT FRUITING: M. H. If the site is low, and liable to be scourged by late frosts, this may account for the absence of fruit; or the plant being unisexual, with male and female catkins growing near each other in the axils of the leaves, may, in the case of your plant, be provided with flowers of one sex only. If these are of the female sex, the planting alongside of a fresh normal tree obtained from a nursery may effect a change.

MUSSEL SCALE ON APPLE-TREES: J. B. A very bad case. It would be well to cut away shoots infested to the degree of those received here. To destroy this scale when present in moderate quantities, follow the recommendation contained in our Hardy Fruit Garden article on p. 95 of present issue.

NAMES OF PLANTS: A Subscriber. *Cymbidium eburneum*.—J. F. A. *Cypripedium Sanderianum* has the reputation of being rather difficult to grow, but we have seen it luxuriating in a close warm house similar to a forcing-house, where an even temperature is ensured. The spotting might arise from a sudden fall in the temperature of the house. When your *Cypripedium Calypso* have finished their next growth, place them in a cooler and drier house for a few weeks, and probably it will induce them to flower.—A Reader. 1, A form of *Adiantum cuneatum*; 2, *Adiantum gracillimum*; 3, *Cyperus alternifolius*; 4, *Pteris cretica*.—*Frant*. 1, *Cypripedium venustum*; 2, *Cypripedium Spicerianum*; 3, *Cypripedium insignis*; 4, *Cypripedium nitens*.—*Heliotrope*. *Cymbidium eburneum*. Some varieties have no purple spots on the lip; yours is a showily spotted form.—H. S. S. *Lycaste cruenta*, and *Cypripedium* × *Ashburtoniae* variety.—F. B. 1, *Nephrolepis davallioides*; 2, *Pteris Adiantoides*; 3 and 7, forms of *Adiantum cuneatum*; 4, *Adiantum concinnum*; 5, *Adiantum hispidulum*; 6, *Adiantum tenerum*.—A. E. 1, *Quercus Ilex*, *Evergreen Oak*; 2, *Prunus lusitanica*, *Portugal Laurel*; 3, *Juniperus recurva*; 4, a Cedar, probably C. Libani; *Pinus silvestris*; 6, *Thuja occidentalis*. As some of the labels were detached, the numbers may in some cases be incorrect.

NITRATE OF SODA AND TARTARIC ACID MIXED: H. L. H. The action of these substances when mixed together on plants is unknown to us. Nitrate of soda is a well-known manure, employed largely when an increase

in the yield of fodder plants, grasses, &c., and leafage generally is desired. The ordinary dressing is from 3 to 5 cwt. per acre. Some crude tartaric acids contain salts of potassium.

NURSERY WORK AND ROUTINE: E. R. These are best learnt by taking service in good general nurseries for some years. It is a large subject; and it would be wise if you decided to what branch to devote yourself, indoors, fruit, or trees and shrubs.

PEARS AT THE TOP OF SOME TREES, SMALL AND DEFORMED: M. H. The trees being aged, may also be decrepit. Can you send specimens of the fruit?

RICHARDIA WITH DOUBLE SPATHE, ONE LEAFY: P. J. C. Not uncommon in very vigorous plants.

ROSES IN POTS FAILING WHEN FORCED: H. N. H. Roses will not force well unless well established in pots a year in advance. Roses received from a nursery in November, potted and pruned immediately, might flower unforced in early summer, but are not fit plants to force early, unless the entire ball of soil and roots is shifted with but little disturbance, beyond loosening a few of the outer roots. Dwarf-budded or grafted Roses should be buried so deep at the first or second potting as to bring the point of union under the soil.

SICK BOTHY MAN: *Enquirer*. The head gardener is not morally justified in stopping the under-gardener's pay, when, owing to illness, he cannot attend to his duties for one day; on the contrary, he would do well to obtain medical advice at the employer's expense, and make no deduction whatever, but this is a matter of humanity and good feeling.

TO SKELETONISE LEAVES: *Carnation*. Place the leaves in a pan of soft water, and leave them therein for a few days; then drain off the water, and replace it with fresh, containing a few drops of muriatic acid, and allow the leaves to remain in this for a few hours. Then try if the leaves are ready for skinning, and if so, take them out of the pan and place in a saucer, and gently rub off the pulp with a soft brush, to do which requires a good deal of patience and care. Then dry them, and put in the sun to bleach.

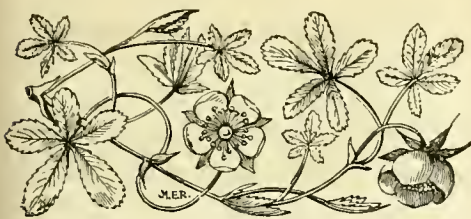
VINES IN A BAD STATE: A. L. The bad state of the Vines has been brought about during recent years by careless cultivation. Some parts of the borders received scarcely any water, others were deluged with strong manure-water. The rods were denuded of their bark to too great a depth, and then dressed with gas-tar (strength not given) and clay, innocent of harm if of the proper proportions. The general condition of the Vines being bad, you must set about their renovation, and that of the border forthwith; removing the apparently dead Vines, making an entirely new border of small width if new canes are planted, and of a suitable width if some of the old Vines are retained. All should be replanted. Let only good pasture loam be employed, mixing with it charcoal, lime-rubble, crushed bones, and Thomson's Vine Manure; the loam forming four-sixths of the whole. Make no use of farmyard or stable manure, and let the after-treatment be of a kind likely to maintain the soil in a healthy state for as long a period as possible. Pay great attention to the drainage of the borders.

COMMUNICATIONS RECEIVED.—E. W. & Sons.—Ch. Dennis.—Dr. Wrench.—H. P. W.—Pomona.—E. C. W. H. C.—E. M.—Daniels Bros.—B. B.—T. T.—W. G.—B. J. S.—J. F.—J. C. T.—J. Miskin.—J. G.—J. W. M.—G. M. W.—W. G. G.—F. W. B., photographs, with thanks.—W. M.—Dicksons, with thanks.—B. A.—T. H. S.—W. A. C.—W. E. B.—D. R. W.—H. J. V.—J. B.—T. H. L., Penzance.—F. B. Scaffan.—H. J. S.—S. A.—E. W. & Co. B. G. S.—C. G. G., with thanks.

DIED.—On Monday, the 3rd inst., at "Graythorne," 89, St. James's Road, Wandsworth Common, London, S.W., PATRICK ROSE-INNES DAVIDSON, formerly of Iwerne Minster, Blandford, Dorset, in his 76th year.



PINANGA KUHLLI, A JAVANESE PALM.



THE

Gardeners' Chronicle

No. 790.—SATURDAY, FEB. 15, 1902.

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THE BLACK-CURRENT MITE.

INTERESTING RESEARCHES.

MR. CECIL WARBURTON, Zoologist to the Royal Agricultural Society, reports in the new volume of the Society's *Journal* the results of observations upon the Black Currant Gall-mite, carried out during the past year—by far the most complete and persistent of any hitherto attempted. In introducing them, Mr. Warburton remarks that, although the mite has been a recognised pest in England for more than thirty years [the first notice and figure were published in these columns in 1869, p. 841, by the late Professor Westwood, Ed.], and it is generally allowed that the first condition for the successful treatment of a pest is an accurate knowledge of its life-history, our acquaintance with the habits of this most destructive little creature has been very imperfect. The accounts of the few observers who have endeavoured to trace its life-history have differed in important points, and the method of its migration has been a mere matter of conjecture. It has followed that suggestions of treatment have been almost entirely empirical, and that different periods of the year have been named as those most suitable to the

application of dressings that may possibly prove effective. This unsatisfactory state of affairs, it is explained, was not due to a want of diligence upon the part of investigators, so much as to the difficulty of observing a mite only one-hundredth of an inch in length, and only a sixth or an eighth of that measurement in breadth. It is true that the mites within a bud can be seen by means of a good microscope; but when it comes to tracing their methods of migration, and keeping wandering individuals under observation for hours at a time, the difficulties are obviously very great.

On a former occasion Mr. Warburton published the results of some observations and experiments upon the mite, but they were chiefly of a negative character; and last year he determined to undertake the task in a thorough manner. As it was necessary to keep infested bushes under daily observation during the whole period of research, lest some important point should be missed, a second observer was almost a necessity, and the assistance of Miss Alice L. Embleton, B.Sc., was therefore obtained. With her help, the research was carried on without intermission from the middle of May throughout the summer and autumn.

From his earlier investigations Mr. Warburton found that there was no month in the year, with the possible exception of December, when the mature mites were not accompanied by eggs and young ones; and this tremendous fertility led him to the assumption that a large proportion of them perished annually without having time to do any damage. This assumption has now been fully confirmed. Some of the mites survive the winter in diseased buds, and as these are the parents of all subsequent broods, it was particularly desirable to observe what became of them. In this connection an important point comes into prominence. The mites are constrained to change their quarters by two causes. Buds that are only slightly infested are able to put out leaves, and the mites within them are then turned out to face the inclemency of an English spring. These are the mites that have been noticed wandering about Black Currant bushes early in the spring, and in Mr. Warburton's opinion, nearly all of them perish, because at that time no new buds have been formed, and he has not found any sheltered under the bark of a bush, or in the soil under it. Indeed, he has had mites on the ground under observation until they were dead. The conclusion is, then, that there is no need to apply dressings for the purpose of killing these early migrants, as they will be killed by the lack of food or the weather.

With respect to the other cause of the migration of mites, the case is entirely different. Where the infestation is sufficient to prevent the buds from developing leaves, the mites are provided with food and shelter until the buds have become withered and sapless, and before that time new buds for the next year's leafage have been partially developed. During February, March, and April the mites within the abortive buds multiply rapidly. About the middle of May some of the buds may be observed to be cracked, and mites can be seen on the out-sides of them. For three or four weeks after this, when the buds are gradually drying up and becoming unfit for habitation,

a constant migration of mites is taking place, and it was to this movement that the observations obviously needed to be chiefly directed.

Some curious and interesting results rewarded the assiduity of Mr. Warburton and his colleague when keeping these summer migrants under notice. Many of them were seen crawling about as quickly as four short legs near the head could drag a long and inert body. By desperate exertions, a mite can cover an inch in about ten minutes. This, it might be supposed, would be an ample rate of progress to enable a mite to travel from an old and withered bud to the nearest new and sappy one. It was found, however, that steady progress was seldom attempted, the crawling motion having been interrupted by curious performances. The mite possesses at the hinder end of its body a muscular disc, surmounted by two rather stiff and curved bristles. Upon such tail-discs mites were observed at frequent intervals to rear themselves, feebly waving their legs in the air, standing up, it is stated "like so many skittles."

At first these curious antics were puzzling, but experiments soon led to an explanation. It was found that mites, when in the upright attitude, if touched with a needle-point or a camel-hair brush, at once adhered to it, and let go their hold upon the Currant bud or stem. But, as Mr. Warburton remarks, it was obvious that needles and camel-hair brushes were not precisely the objects likely to present themselves to the mites in the ordinary course of Nature, and consequently not the objects of their rearing motion. Conjecturing that it was some insect, as a carrier, that was sought by the blind instinct of the mites, spiders, mites (other than the gall-mites), and ants were induced to run over the infested buds, while flying insects that had been seen to alight on the buds were caught and subjected to microscopical examination. Here we have the most important result of the research. In almost every case mites were found clinging to the hairs, legs, or bodies of the insects. "We can hardly doubt, therefore," Mr. Warburton remarks, "that this habit of rearing themselves upright, and waving their legs in the air, has been acquired for the definite purpose of obtaining the aid of passing insects in the accomplishment of journeys far beyond the reach of their own limited powers of locomotion."

But, a reader may object, the mites would do much better by crawling to the nearest new bud than by taking a precarious journey in the air. No doubt, if there are plenty of new buds on the bush. But it is to be borne in mind that there are few new buds on a bush half killed, and none on one entirely withered through the agency of the mites; also, that an infested bush seldom grows rapidly enough to provide food for a constantly and tremendously increasing number of mites. Hence the need of a better means of migration than that of crawling very slowly to the ground, along its surface, and up the stem of another bush, possibly distant, and not improbably sufficiently occupied by other mites. Here, however, we have one of the numerous examples of the apparent provision of Nature for the perpetuation and extension of the race, regardless of the fate of the individual. As any passing creature, Mr. Warburton observes, is seized indiscriminately, it is a mere accident

if the mite reaches a destination of the slightest use to it, and myriads that are borne away must be carried far from their food-plant, and perish of starvation. The latter part of this statement is probably true; but as the majority of insects that alight on Black Currant bushes may be supposed to do so for some special purpose, and to travel from one bush of the kind to another, it seems an exaggeration to say that it is a mere accident if a mite is carried to a desirable destination. Winged Currant aphides were observed to be particularly useful as carriers of the mites, which were found clinging to the antennae of many of them.

Another method of speedy locomotion on the part of mites was observed, that of projecting themselves endways from their standing position to a lower part of the bush or on to the ground. This they appear to do in desperation, after waiting vainly for a passing insect. But in this case again, the method of migration is precarious, as the mites which fall to the ground soon perish if they do not find a fresh bush and crawl up its stem. At least, the most careful observations failed to discover anything but more or less speedy death among mites on the ground. Hence, Mr. Warburton concludes, that there is no basis for the supposition that the ground under infested Black Currant bushes becomes contaminated with mites. This is comforting to growers who desire to make new plantations on the same ground as that occupied by old ones.

Another comforting piece of negative evidence is to be found in the failure of Mr. Warburton to find any mites under loose bark, in cracks on the stem, or on the roots of bushes. On the other hand, he observed mites wriggling their way into young buds, and he even found some attacking Red Currant bushes—which, however, are never seriously injured by mites.

Eggs were first found in young buds in the last week of June. After that time multiplication is very rapid. Mr. Warburton looked in vain for a second general migration, only rare cases of mites outside buds being discovered in the autumn.

If washing be tried, from the middle of May to the middle of June is the time to catch migrants; but that is just when the blossom might be injured, and, on the whole, washing is pronounced of doubtful value. Unfortunately, the only methods of checking the pest which Mr. Warburton at present can recommend are the old one of picking off the diseased buds in winter, and the removal of all wood bearing next year's buds, which, as he observes, would almost entirely destroy the crop of that season. It is to be hoped, however, that the last word upon the destruction of the Black Currant-mite has not yet been written. H. E. B.

NEW OR NOTEWORTHY PLANTS.

CRASSULA CONJUNCTA, N. E. BROWN
(N. SP.).

This species is nearly allied to *C. perforata*, Thunberg, and in the absence of flowers might be mistaken for that species, unless critically examined. The distinguishing points are as follows:—The leaves are always concave above, never flat or convex, nor recurved as they frequently are in *C. perforata*; they are of a rather lighter glaucous-green, and the ciliation on their margins is rather longer and

denser. The inflorescence is narrower and much more compact, the cymes of which it is composed having much shorter stalks, and the flowers are larger and pure white, not dull yellow as in *C. perforata*. The plant was sent to Kew by Professor MacOwan from South Africa in 1896, and is now in flower in the succulent-house at Kew.

Stems erect, often decumbent at the base, $1\frac{1}{2}$ lin. thick, somewhat woody in the lower part, glabrous, brown. Leaves $\frac{1}{4}$ to $\frac{3}{8}$ in. distant, fleshy, broadly connate-perfoliate, as if threaded on the stem, $\frac{1}{2}$ to $\frac{3}{4}$ in. long and as much in breadth, about 2 lin. thick, broadly ovate, shortly and somewhat obtusely pointed; very spreading but not recurved, slightly concave above, convex beneath, glabrous, rigidly ciliate with very short cartilaginous hairs, pale glaucous-green, tinted with red along the margins. Inflorescence a terminal thyrsus 2 to 3 inches long, $\frac{3}{4}$ inch in diameter, composed of six to eight (or more?) pairs of small, rather crowded, four to ten-flowered cymes. Bracts like very reduced leaves, 1 to 2 lin. long, $\frac{3}{4}$ to $1\frac{1}{2}$ lin. broad, connate, ovate, acute, erect, not ciliate. Peduncles of the cymes $1\frac{1}{2}$ to $1\frac{3}{4}$ lin. long, glabrous. Bracteoles like the bracts, but smaller. Pedicels $\frac{1}{2}$ to $\frac{3}{4}$ lin. long, glabrous. Sepals $\frac{1}{2}$ lin. long, ovate-lanceolate, acute, glabrous, not ciliate. Corolla $2\frac{1}{4}$ to $2\frac{1}{2}$ lin. in diameter, pure white; petals $1\frac{1}{2}$ lin. long, $\frac{3}{4}$ lin. broad, oblong, lanceolate, subacute, very shortly connate, and also adnate to the stamens at the base, spreading, recurved at the tips, glabrous. Stamens five, filaments $\frac{3}{4}$ lin. long, shortly adnate to the corolla at their base, gradually tapering upwards, glabrous, white; anthers $\frac{1}{2}$ lin. long, reddish. Hypogynous glands minute, about $\frac{1}{4}$ lin. long, quadrate, yellowish. Carpels five, about 1 lin. long, narrowly ovoid, tapering into a short style, pale yellowish-green, glabrous. N. E. Brown.

ANÆCTOCHILI.

I HAVE pleasure in sending you the following note about these gems of the vegetable kingdom—the most beautiful plants on earth, considered collectively—Anæctochili.

These small Orchids are found in both the eastern and western hemispheres, but the kinds or varieties which have the most lovely and richest leaf-colouring come from Java. Professor Treub told me a few years ago they do not grow so well in the forest under natural conditions as they do under cultivation at Utrecht.

Generally, these "jewels" are found difficult to keep alive; for some time they continue to put out two or three leaves, but soon become unhealthy and die off. Often and often I have sent a couple of healthy plants to my colleague, Mr. A. Fiet, Curator of the Botanic Garden at Groningen. For a few months they have been all right in the north of our damp country, but notwithstanding careful attention, sooner or later they died.

Three years ago, again I sent him two nice little plants, which arrived in perfect order. Perhaps he remembered on which side of the house they have a place at Utrecht, that is, on the north side. He gave his plants the same aspect at Groningen, and since then he has grown them just as well as I do.

We have, in one of our stoves, a small case on the north side, which is the home of our Anæctochili. Each plant is in a thumb-pot, filled with good peat and living sphagnum-moss, mixed with small broken pieces of charcoal and some sand. Twice a year, in March and October, they are repotted into clean pots, a work for which I use

my own hands and care. From most of them I take off young plants, an operation which every propagator understands, and keep the plants growing; when it is done they look so happy and so grateful. I am sure that if they could speak they would say, "You have done a good work; to be sure, we will make new growth and beautiful leaves." In summertime we give them plenty of water, but at this time of the year less, without letting them get quite dry. Whenever they show signs of flowering, we at once cut the bloom-spikes out, as soon as they can be got at.

Let me finish by telling your readers that everybody may have a look on these pearls except "Monsieur le Soleil," whose beams are not good for these lovely creatures. J. K. Budde, Utrecht.

COLONIAL NOTES.

FERNS IN QUEENSLAND.

WE have not many species of Ferns in the immediate neighbourhood, *Alsophila australis* is the finest. I have seen them 20 feet high, and with quite as much spread of fronds. Farther north *Angiopteris* and *Marrattia* grow very fine. Six months ago I had spores of twenty-six species sent me from England, and most of them have germinated, but several of them are British, so it is doubtful if they will live in this heat and dry air. Mr. Drury's articles in the *Gardeners' Chronicle* on Ferns are always very interesting to me, also the reports of the scientific committee. The last nine years of my life in England was spent as gardener and general manager with the late Sir W. Siemens at Tunbridge Wells, where I suggested to him the application of electric light to vegetation; it was soon put in practice, and Dr. Masters was one of the many visitors who came to see it. At Sir William's death I came out here. I was for ten years manager of the State Nursery here, but left it two years ago. The nursery was established for the purpose of collecting fruit-trees, &c., from all the tropical world, and testing their suitability for cultivation in Queensland. The chief crop is Sugar-cane, as it is really the only farm-crop grown, and great uneasiness prevails just now among the farmers and manufacturers with regard to the Kanaka Bill now before the Federal Parliament, for if it passes in its present form, and Polynesian labourers are done away with, then the Sugar industry will decline, for white men will not [or cannot] do field work in this climate. The Orange grows very well, but there is no market for it. The Mango is the king of fruits, but for that also there is no market, and tons rot on the ground. I feed my cows on Mangos, but that does not use up the crop. I have to read a paper on the life-history of the Fern at our next horticultural society's meeting, and shall draw largely on Mr. Drury's Fern lore. D. Buchanan, Kaliguil House, Mackay, Queensland.

IPOMŒA REPANDA, Jacq.

There are few prettier native climbing plants in Grenada than this *Ipomœa*. It is found in the parish of St. David's, where, among the trees and bush growth, the magenta-coloured flowers may be readily seen by persons passing along the main roads. The root of *I. repanda* is large, and not unlike some forms of Sweet Potato (*I. Batatas*), so extensively cultivated for food purposes. During many weeks now we have had it flowering on a wire support imported from England. The flowers are borne in large numbers. The leaves differ widely in their shape, some being simple, others three-lobed, others yet

again finely fingered, and between these are noticeable diverse and irregular cuttings. *Ipomoea repanda* is undoubtedly a desirable garden plant. That under cultivation in the Grenada Botanic Station was presented by Mrs. Branch on February 15, 1899, whose husband, by the way, the Rev. G. W. Branch, is a keen agriculturist, and a sympathetic gentleman in anything that tends to further and advance the interests of this Station and local agriculture generally.

LAGETTA LINTEARIA, Lam. (JAMAICA LACE BARK).

From the Botanical Gardens of Trinidad in 1898 we received a small plant of the West Indian Lace Bark-tree; subsequently it was planted out on Section N in the Botanic Station of this colony, where it has made fair progress. There are times of the year when the plant becomes divested of foliage, and then it appears as a bare, twiggy object; to-day—December 14, 1901—it is in full flower. Its height is 6 feet. The pure white and very fragrant inflorescences are a little like those of the Lily of the Valley, as seen produced upon this Lagetta. Of a delicate green colouring are the leaves when the tree breaks into blossom. We found difficulty in obtaining the species until Mr. J. H. Hart was good enough to send it from Trinidad. The lace-like inner bark is taken advantage of in some parts, and worked up into many kinds of fancy articles, doilies being among the number. W. E. Broadway, Grenada.

NEW GUINEA.

Mr. F. Manson Bailey, the colonial botanist of Queensland, publishes as reprints from the *Queensland Agricultural Journal* figures and descriptions of New Guinea plants, among which may be mentioned *Selaginella Palupalu*, a native name; *Cassia Bartonii*, and *Nepenthes Cholmondeleyi*. *Gomphocarpus brasiliensis*, an introduced plant to Queensland, is likely to be poisonous to stock. These and various other plants are described in the seventh and ninth volumes of the *Queensland Agricultural Journal*.

FLOWERS WHICH CHANGE COLOUR.

EVERYONE has heard of the blushing Rose. I need not therefore take up time with an account of such a well known phenomenon. There are other flowers of which it may be said that they are "born to blush unseen," except by those who are always on the alert for unconsidered trifles in the plant realm. And truly, when we come to study this curious tendency on the part of many of our native plants (as well as those of foreign lands) to change colour, the matter is full of wonder. What end can there be to gain, what result to achieve? Can the plant itself be benefited by the action, or is there some altruistic principle at work? We must try and discover the answer. The phenomenon is by no means so rare as one might suppose. Everyone who has noticed the *Celandine* of early spring will have observed how liable its petals are to get blanchet, and assume a washed-out appearance. When we come to think of it, we recall the fact that many garden flowers not only fade in the ordinary sense of the word, that is, droop and die, but they also fade as a carpet or ribbon will do when exposed to the sun, or as a dress material or wall paper are apt to do after having been for a while in use. It may be we have thought it was the same in both cases—that the flower, like the dress, had grown pale before the blanching sun. That may sometimes be the case, but we want to examine quite a different set of conditions.

Let us begin with a group of plants which contain some of the best known English flowers, and at the same time several of the most striking illustrations of colour change. I refer to that group which contains the Forget-me-Not, Bugloss, Borage, Comfrey, and Hound's-tongue. If you open any botanical work you will find a number of statements respecting these flowers, such as the following:—"The flowers are at first yellow, then blue;" or, "The blossoms are red on first opening, after which they change to bright blue or purple." You will also find that such names as *versicolor* (or that which changes colour), and *mutabilis* (i.e., mutable or changeable), are employed in connection with such plants, showing that when they were originally described and named by the botanical authorities, this peculiarity struck them as one of the most notable features. Thus we find one of the Forget-me-Nots (*Myosotis versicolor*) described as having flowers which are "concave, yellow, then dull blue;" or as another puts it, "at first pale yellow, afterwards blue. On plants inhabiting damp places, the flowers are at first white." Another has flowers which are pale pink in the bud, but very bright blue when expanded.

I was cycling the other day over the Sussex Downs, and came across an enormous quantity of the beautiful Viper's bugloss (*Echium vulgare*). The bulk of the flowers were of a rich blue colour, but among them it was easy to detect some which were decidedly red. You look up your botany, and find it recorded that the flowers are at first reddish, afterwards bright blue. I like to turn to that quaint old observer of Nature, Gerard, and see what he has to say about these things. He tells us that there is a kind of Viper's bugloss "that hath rough and hairy leaves; the stalk also is rough, charged full of little branches, which are laden on every side with divers small narrow leaves, among which leaves grow flowers, each of a sad blue or purple colour at the first, but when they are open they show to be of an azure colour, long and hollow, having certain small blue threads in the middle." And as I turn over the pages of his wonderful *Herbal*, I find under the Lungwort (*Pulmonaria*), or Cowslips of Jerusalem, this very accurate note: "Cowslips of Jerusalem, or the true and right Lungwort, both stalks a span long, bearing at the top many fine flowers, growing together in bunches like the flowers of Cowslips, saving that they be at the first red, or purple, and sometimes blue, and oftentimes all these colours at once." How little did old Gerard dream that in the days to come such facts as these would prove of surpassing interest, and throw a wonderful light on the problems relating to the cross-fertilisation of plants! Thus far, we have seen that flowers may be white, yellow, pink, red, or purple, and eventually change to blue. In each instance, up to the present, blue has been the last or highest colour. The flowers belonging to this group of plants, under normal conditions, never reverse the order. They do not begin with blue and end with pink, red, yellow, or white. Evidently, then, there is method and order in the variations, and the changes take place on a definite plan.

Before we enquire into the cause of this remarkable change, let us ask if it exists elsewhere in the plant world. It does, and to a very great extent, though the change is not always along the same line, or with the same colours. We find, for example, that some flowers only change colour when they are fading away, after having fulfilled all the duties of life, just as the blushing maiden may

change into the pallid or sorrow dame. Thus, we frequently find the White Hawthorn becoming pink, and I remember once in Cumberland observing with great surprise how a hedgerow which a week before had been one mass of snowy blossoms, was now quite of a ruddy hue. The Hawthorn had changed colour, and in so doing had progressed a stage from white to pink. Similarly, as every cottager knows, the modest little Virginia Stock, which on opening is of a yellowish tint, changes to pink, then progresses to a bright red colour, and finally appears as a mauve or blue flower.

I suppose few cultivated flowers show this peculiarity more strikingly than the Hydrangea. Several of the species are white in their early stages; but the one which flourishes best in our English borders, and grows with amazing profusion out-of-doors in Devonshire, starts life with pink blossoms; these change according to a regular law, gradually ascending from one colour stage to another until the series is complete. Those who are interested in the subject would find it alike pleasant and profitable to note down the changes.

Sometimes we see this law of change illustrated, not in a single flower, but by comparing the closely related species. For example, we have in England quite a number of wild Geraniums. Some of these have very small petals, and are fertilised by insignificant insects, or depend upon themselves for setting their seeds. The blossoms of these species are white, pink, light red, flesh-coloured, rising to blue and purple. As the flowers become larger, and cross-fertilisation is effected by the more advanced insects, such as bees, the colours become more intense; and so we proceed from rose colour to light-purple, purple, blue-purple, till we reach the dusky Geranium (*G. phaeum*), in which the blossoms are purplish-black—one of the deepest colours found in our flora. This parallel in a group of closely-related flowers, with the changes which take place in the Forget-me-Not, Lungwort, or Virginia Stock, is sufficiently curious to arouse attention and enquiry. The Mallows might be studied in the same way. One of these, a foreign plant, known as the Mutable Rose (*Hibiscus mutabilis*), resembles the Hydrangea in its colour-changes. It begins with white, then becomes flesh-coloured, and ends with being of a rich red hue. Our Sweet Peas often reveal similar changes. A *Sussex Naturalist*.

(To be continued.)

FLORISTS' FLOWERS.

PROPAGATING TREE CARNATIONS.

ALTHOUGH there is no definite time for taking cuttings, the months of February and March form the best season for striking cuttings of these plants, and cuttings struck then will make good plants for flowering the following winter. It is very important to get short-jointed side shoots for cuttings. These succeed best, and also branch out and make better plants than the long, thin growths. Success depends mainly on attending to small details. In the first place, care should be taken that the stock plants are free from insect pests, and that previous to taking cuttings they are fairly moist at the roots. I like to take the cuttings early in the morning, when they are fresh and stiff. They will then snap off at a joint and require no trimming at the base, and these always root better than if cut off. I usually cut the tips of the leaves off, and put twenty cuttings in a 5-inch pot, using loam, peat, and sand in equal parts, with a little

extra sand on the surface. The pots should be prepared beforehand, so that the cuttings can be put in as soon as taken off, or if anything should happen to delay, and they get withered, they should be put in water for a time. They root more quickly if they are kept quite close, with a good bottom-heat, and a surface warmth of 10° to 15° less. The frame should be opened every morning, but only left for a short time, for if once the cuttings get withered failure is sure to follow. They may be frequently sprinkled overhead, otherwise no water is needed. Provided the fine, thread-like fungus (which is the cause of what is called "damping") does not make its appearance, almost every cutting will root if reasonable care is taken, but a little neglect may result in losing a whole batch of cuttings. Nothing is more disastrous than letting them get withered, or exposing them too much before they have begun to make roots. To ensure short, sturdy plants, they must be removed from the close frame as soon as rooted, and gradually hardened off, by which time they will be ready for potting-off singly, which should always be done before the pots get too full of roots. *A. Hemsley.*

WINTER-FLOWERING CARNATIONS.

Having read Mr. Slade's excellent article on winter-flowering Carnations in the *Gardeners' Chronicle* of February 1, I must beg to differ with him concerning the variety Mrs. Leopold de Rothschild. Mr. Slade admits that it is a capital variety, but not a good bloomer in the winter. Having grown about 1,000 each year, since it was introduced, I do not hesitate to say that it is the very best variety I have yet seen for the above purpose. We strike the cuttings about the first week in February, and then as soon as they are fit, pot them off into thumbs, 60's being, I think, too big for the first potting; and finally shift them into a 72-size pot. But at what season the plants are to flower depends more upon the time the growths are stopped than anything else. The first stopping is done just as they are getting established into 4½-inch pots, or whatever size they are put into. That stopping is generally sufficient for most varieties, but Mrs. Leopold de Rothschild being such a quick and strong grower requires a second stopping about the first week in August if they are required to flower after November. By stopping the second time we get larger plants, and of course, a larger quantity of bloom. Willis' Manure is a capital stimulant, but I find soot-water and Clay's Fertiliser also good manures for them. I cultivate most of the varieties mentioned by Mr. Slade, viz., America, Glacier, Mrs. J. T. Brookes, Mrs. Lawson, &c.; but the Carnation has yet to be introduced that will compare with such a fine variety as Mrs. Leopold de Rothschild. *J. Jennings, Ascott Gardens.*

THE FOLIAGE OF ROSES.

THIS is a subject of some importance with reference to garden ornamentation; for there are many beautiful varieties of Roses which would be artistic in effect (especially when their growth begins on the confines of summer, and their tender buds appear), even though they did not produce thereafter a single flower. This is especially true of the Tea Roses, which have a delicacy of aspect, a gracefulness of manner—if I may so express it which their stronger brothers, the so-called Hybrid Perpetuals, do not equally possess; though it must be admitted by the impartial cultivator that they make ample amends for

this inferiority to their fairer sisters by their vigorous development, their massive foliage of a lustrous green, and the deep radiance of their flowers. But it may expressively be affirmed of the Hybrid Teas that, in this new race of pre-eminently beautiful Roses, the noblest attributes of the refined and graceful Teas, and of the stronger-growing Hybrid Perpetuals, are grandly combined. The finest foliaged Rose in my extensive collection of 180 distinct varieties is one which I find included in very few of the leading catalogues, I mean Madame Joseph Combet, which Mr. Wm. Paul includes among the Hybrid Perpetuals; mainly, I presume, because he does not devote a separate department to the Hybrid Teas. The foliage of this exceedingly strong-growing and even aspiring Rose is uniquely lovely, especially about the middle of June. At that leafy and luxurious period it is an object of great admiration to all beholders, growing as it does very conspicuously in the centre of my garden. Few, if any, of its contemporaries approach it in artistic effect; though one of its companions, Madame Lauretti Messimy, has also flower-shoots of marvellous hue. The latter is the finest of all the China Roses, whether as regards the production of graceful leaves or tenderly fragrant flowers.

Several of the Hybrid Perpetual Roses, while not so richly coloured, have very fine foliage, especially such varieties as A. K. Williams, whose opening shoots have a unique, characteristic, carmine shade, shining through the green; Madame Gabrielle Luizet, Crown Prince (whose virginal colours in early summer are notably fine), Cléo, Spenser, and Margaret Dickson. Of the Tea and Noisette Roses, some of the most impressive are Madame Pierre Cochet, which many rosarians regard as superior to William Allen Richardson, and whose foliage is quite as attractive as its deep orange flowers; L'Idéal, Catherine Mermet, Comtesse de Nadaillac, Safrano, Hon. Edith Gifford, Cleopatra, Sunrise, Enchantress, Bonquet d'Or, and Climbing Perle des Jardins. These, and many other kindred varieties that cannot here be enumerated or described, combine flowers of the noblest beauty with foliage of the loveliest artistic effect.

Many of the hybrid Tea Roses, whose splendid endowments I have already indicated, are equally effective, rivalling the Noisettes in their far-shining hues. Supreme among these are the invincible La France, which invariably generates magnificent shoots; Duchess of Albany, and Caroline Testout, which have similar characteristics; Papa Gentier, a rose of rare beauty; and Madame Pernet Ducher, two of the most precious of modern introductions; Marquis Litta, Clara Watson, a variety whose capabilities have been somewhat under estimated; Viscountess Folkestone, a supreme favourite with rosarians; Killarney, a charming semi-climbing Newtownards Rose; Gustave Regis, Marquis of Salisbury, and Mrs. W. J. Grant. All of those fragrant floral treasures of the garden are of great decorative value, not less for their distinctive foliage than for their odorous and luminous flowers.

When Wordsworth wrote, in a moment of inspiration:—

"It is my faith that every flower
Enjoys the air it breathes,"

he was expressing, consciously or otherwise, a scientific truth. For it is an unquestionable fact, that plants of every description breathe vitality through their leaves, and unless these are in a pure and health-giving condition they

do not realise the deep blessing of strong and vigorous existence. Life to them, under such conditions, can only be described as a living death. If, on the other hand, the leaves are fresh, and bright, and beautiful, unconscious of the influence of noxious insects, and other subtle enemies of vegetative life, they absolutely seem, as Wordsworth has told us, to enjoy their gracious activities, and rejoice in their strength.

While, therefore, the foliage of our fairest Roses is exquisite, it serves a higher purpose than this; it not only ministers to our instinct for beauty, but generates the healthful energy, and conserves the vital essence, so mysterious to us, and yet so realisable, of the life of those plants by which our natures live.

"Nature is but a name for an effect,
Whose cause is God."

David R. Williamson.

PEAS FOR SUCCESSION.

THE note I sent some time ago for publication in the *Gardeners' Chronicle* on the subject of Peas, brought some interesting communications which were published; and some persons asked why certain varieties were omitted, and others suggested different varieties. I agree with the remarks made by the several writers, but my note mostly concerned those varieties which I had found the most generally satisfactory. I intended to point out that diverse soils, methods of cultivation, and localities, account for great differences in Peas, and that which may succeed in one district or garden may fail in others. I indicated varieties that succeed in the cooler north, but failed at Syon. My present object in writing is to reply to the note (p. 33) from a correspondent, "C. B., Cambs.," and I gladly do as "C. B." suggests; and I would also thank Mr. H. W. Ward for his kind remarks concerning my note in the previous volume (p. 388). I try to get Peas for the table as early as possible, and employ glass protection at the start; but I am not sure that "C. B." can afford Peas this protection—still, it is one well worth trying, and which greatly aids early cropping. Briefly, it may be stated that there is great variety in Peas, and gardeners have their favourites. For first crop I sow early in December in 5-inch pots in good loamy soil, not too light, but porous, seven to ten seeds in a pot, thinning if necessary when the seedlings are large enough to handle, to about half the number, for nothing is gained by crowding the plants.

It may be asked why sow early in December? Because only cold frame treatment is adopted, and when the plants are well above the soil, air is admitted freely in suitable weather, and the plants are never coddled. I admit that Peas sown, say, six weeks later will, if sown in heat, be as large; but such Peas are less satisfactory than those grown in a cold frame from the start, the latter, if planted properly, not suffering. It is a waste of time to grow the plants for some time and then lose them. The east and north-east winds in March are trying for plants raised in heat, and if you do not plant out in March, pods cannot be gathered in May. My methods are very simple. The rows usually occupy a south border, which has a wall at the back or north side, and the soil is well enriched; the drills are made rather deep, and protection is given by sticking in branches of Yew or common Spruce, and the soil is made firm about the roots. The produce of these rows will be ready in the last week in May or first

week in June, according to the sort of weather that has prevailed. I need scarcely add that I am not wedded to the pot cultivation of Peas, and other means may be adopted in raising the plants, viz., sowing on strips of turf, in boxes or drain tiles; the 5-inch pot is handy, but the roots are much cramped in it. I have sown Peas in larger pots, and to the number of eight to ten seeds in a pot, and have been obliged to cover the plants when in bloom on frosty nights.

I now come to the important point, viz., the varieties to sow, and there is a fine choice. In pots I sow three varieties, Chelsea Gem, Gradus, and Daisy. The first-named is the earliest; the others give larger pods; and though these are 3-feet Peas, if staked in pots they rarely exceed 2 feet, and if they show any inclination to run higher, the bine is stopped at 2 feet. My earliest Peas in the open are Bountiful, Early Giant, and May Queen. I place Bountiful first on account of its hardiness, as it may be sown earlier than the others, and it has grand cropping qualities. The seed is sown as early in February as the ground can be worked; indeed, in the light soil at Sion I have sown in January, and the crop has been ready from June 10 to 20. This sowing succeeds the pot plants, and is also grown on a sheltered border; and as regards gathering, the seasons vary, so that I have given a good margin, though we have had pods earlier than the dates given. The next sowing is made in a less warm situation, and the same varieties are sown about the middle of the present month, the crop turning-in a little later than the last-named. For this sowing, the grower will find such varieties as Strata-gem, Acme, Excelsior, and Thomas Laxton—all splendid croppers—the best to sow. Acme is a new Pea, similar to, but larger than Chelsea Gem. From the middle of February sowings are made at tri-weekly intervals, and in the open quarter; and for March sowings I prefer Duke of Albany, a fine variety, whose failing is that it turns in quickly, and nearly all at once. Others well worth "C. B.'s" notice are Main Crop (Veitch), Telephone, Alderman, Criterion (Veitch), and Eureka. Any of these varieties, sown in April and May, will be reliable, and give the July and August supply.

Now comes the more critical season for Peas, viz., September and October. Indeed, on thin or gravelly soils the plants at times fail in August, and where this is the case I would advise sowing in trenches, using a liberal amount of decayed manure, and sowing thinly. Indeed, this latter advice is applicable to all sowings from the middle of March, as many failures occur when the seedlings crowd each other.

For late April and May sowings, any of the Ne Plus Ultra type may be sown. One of our best early autumn Peas is undoubtedly Veitch's Autoerat of Ne Plus Ultra type, which if sown in May and early June affords a grand crop if the soil is made good. Goldfinder is another splendid variety; and one your correspondent named Chelsonian, a very fine Pea of the Ne Plus Ultra type, as are Windsor Castle, Prodigy, Carter's Michaelmas, Sutton's Late Queen, and Latest-of-All, as autumn Peas. When these varieties fail, I have sown the first early Peas for October crops, but they need much attention in the matter of moisture at the roots, and it is well to sow them in a cool border in rich soil, and take means to keep down thrips and avert mildew attacks. Many of the tall varieties I have noticed above, I have found not to suffer from mildew late in the year. G. Wythes.

CROSSING AMONG CABBAGES.

WE extract from the columns of the *Standard* the following account of some experiments made under the direction of Mr. Arthur Sutton, which abundantly confirm the opinions generally held as to the facility of intercrossing among the members of the genus *Brassica*, and the imperative necessity of growing particular stocks apart from their near allies:—

"About two years ago Mr. Sutton was surprised to see in a public print statements by an agricultural authority who had had some experience in seed-growing, to the effect that all the trouble he had taken to isolate various cruciferous seed crops in the past was probably unnecessary, because it now appeared that they would not cross-fertilise naturally. Apparently, he based this conclusion upon the statements of some experimenters in artificial crossing, to which he was referring. Mr. Sutton knew that cruciferous plants would be particularly liable to cross, and to spoil each other, if the care thus pronounced unnecessary ceased to be taken, and therefore he determined to carry out a demonstration, not to satisfy himself, but to prove to doubters that plants of the Cabbage tribe would cross naturally with the utmost freedom when grown for seed side by side. Accordingly, at the beginning of 1900, he planted in a seed-bed one plant each of dwarf green curled Kale, Brussels Sprouts, Broccoli, red variegated Kale, purple curled Kale, thousand-head Kale, Couve Tronchuda (or Portugal Cabbage), Giant Drumhead Cabbage, Sutton's Favourite Cabbage, dwarf Blood-red Cabbage, and Drumhead Savoy. The Broccoli, Drumhead Cabbage, Blood-red Cabbage, and Savoy plants were either killed by the winter or so much damaged that they did not mature any seed, although the Red Cabbage, at least, appears to have grown to the flowering stage. The seed of each of the other plants was saved separately, and carefully sown in the spring of 1901.

From the plants thus raised two transplantings were made, each of about forty plants. In one transplanting the plants were taken without any selection; while in the other as many diverse forms as could be picked out from the appearance of the leaves were chosen. The results, now that the plants are mature, are so remarkable that they could hardly be imagined by anyone who has not seen them. It is no exaggeration to say that the crossing among these several varieties of cruciferous plants, by natural agency, has been as profuse and intricate as it could have been rendered by the most ingenious human manipulation. The results of the interesting experiments are still to be seen in Messrs. Sutton's trial-grounds within a mile of Reading.

On one side of a path a specimen of each of the types of seed-bearing parent-plants is growing, and opposite to it there are four rows of plants produced from the seed of the similar plant subjected to the trial. As has been intimated, the demonstration is duplicated, one set of plots containing plants taken at random, and the other plants selected for variety in appearance when they were small seedlings. There is very little difference between the two sets of plots in degree of variation from the parent stocks, now that the plants are mature. The plants which appear to have exhibited the greatest potency in the infection of other varieties are Brussels Sprouts and red variegated and green Kale, possibly in part because they, or the first at least, were flowering and producing pollen for a longer time than the other plants. In the case of Brussels Sprouts, it is reasonable to suppose that the numerous flower-heads which they throw up would mature by instalments, just as the top and the stem sprouts do when they are grown for cooking. In less degree this might have been expected, also, in the case of Thousand-head Kale; but the inoculative potency of this variety has proved in the trial smaller than that of some other kinds, though greater than that of the Close-hearted Cabbage.

Among about forty plants grown from the seed of a dwarf green and curled Kale, taken at random, there is not one true to type. There are two purple Kales, several of a coarse type of Kale, not properly curled and partly of Brussels Sprouts character, and one semi-Cabbage. In the companion plot of selected plants from the same seed, there is one Kale nearly true to type, and seven are dwarf purple Kales, while one is like a Thousand-head, the rest being coarse green Kales.

In neither of the Brussels Sprouts plots is there a single plant with "buttons" on its stem, as there would be in one of true type. Instead, there are the most curious specimens of loose Sprouts—some quite purple, some variegated red, and some with Kale leaves; while one has a top and stem Sprouts showing the peculiar light green and white-veined foliage of the Couve Tronchuda. It is not impossible that this Sprouts-Couve cross, alone among all the "sports," may prove worth perpetuation as a fresh culinary acquisition. The variegated Sprouts present a pretty appearance, but are of no value for cooking.

The red variegated Kale plants in both their plots show more signs of Cabbage inoculation than any

others. In each plot there are four plants of distinct Cabbage character, half of them being red and half variegated. Other plants are bastard types of the Kale, some red variegated and some green, while five in the unselected plot are sufficiently true to type to pass. Several of the plants are of Brussels Sprouts character, with Kale leaves.

Among the progeny of the dwarf purple Kale there are several plants of curious foliage, almost like the leaves of Parsnips in shape, and apparently, the result of the crossing of thousand-head and purple Kale. Other Kales have very large leaves, while some have curiously twisted foliage, unlike that of any cultivated plant. There are five dwarf purple Kales in one plot and ten in the other, but only two are as densely curled as the seed-bearing parent stock, and nearly all are much deteriorated in colour.

There is not a single plant of true type in the unselected plot of thousand-head Kale. Several are obvious crosses between that stock and Brussels Sprouts, a few of which show markings of the red variegated Kale, while others are semi-Couve Tronchudas. In the selected plot there are five plants of nearly true type, four more like Couve Tronchuda, and one a thousand-head Couve, others being nondescript purple or green Kales of degenerate forms.

Four distinct Cabbages are to be found in the two Couve Tronchuda plots; other plants are apparently crosses between Couve and thousand-head Kale, or Couve and Brussels Sprouts; and there are several like Drumhead Kales, but heartless, as the Couve is. In the selected plot are to be seen four plants similar to the seed-bearing parent, but not true to type, while there are none as nearly true in the other plot.

Perhaps of all the seven plants which produced seed, the Cabbage has been least spoilt by exposure to chance crossing. There are six true to type in the two plots, with three semi-red Cabbages, but still the great majority of the plants are of mixed character. There is one distinct Cabbage-Couve cross, and another plant appears to be a combination of Cabbage and thousand-head Kale, besides which are to be found two Cabbage-headed Brussels Sprouts, and several Kales of coarse type, probably Cabbage-Kales. Perhaps the most curious plant in either of the Cabbage plots in one of combined Couve Tronchuda and Brussels Sprouts character, the Sprouts on the stem being stained by the red variegated Kale.

NOTICES OF BOOKS.

INSECT LIFE: *Souvenirs of a Naturalist*, J. H. Fabre, Docteur des Sciences. "That inimitable observer," Charles Darwin. Translated from the French by the author of *Mademoiselle Mori*. With a preface by David Sharp, M.A., F.R.S., and edited by F. Merrifield; with illustrations by M. Prendergast Parker. (London: Macmillan & Co., Ltd.; New York: The Macmillan Company.)

A NUMBER of hands seem to have worked in the formation of this book, but a second reading of the somewhat lengthy title-page renders clearer the amount of credit due to each. First, much sympathy is elicited for the patient naturalist who, with a minuteness suggestive of that of Alphonse Karr, entered into the study of insect life. We are introduced to the Scarabeus, and his near relation *Gymnopleuris pilularius*, a scavenger beetle, whose behaviour is watched and experimented upon with results much to the credit of the creature's nerve-power and physical capacity for work. Then we pass on to the *Cerceris*, a burrowing hymenopteron; the yellow-winged *Sphex*, and many another creature, and we almost seem to share our author's eagerness in studying these, not as mere "specimens," but as wonderful beings instinct with life, and with a mission in the world. Here is an extract relating to the *Ammophila*:—

"That a wasp should return to the nest and a bee to the hive does not surprise me; these are permanent abodes, and the ways back are known by long practice; but the *Ammophila*, who has to return after a long absence, has no aid from acquaintance with the locality. Her shaft is in a place which she visited yesterday, perhaps for the first time, and must find again to-day when quite beyond her bearings, and moreover when she is encumbered by heavy

prey. Yet this exploit of topographical memory is accomplished, and sometimes with a precision which left me amazed. The insect made straight for the burrow as if long used to every path in the neighbourhood; but at other times there would be long visitation and repeated researches. If the difficulty became serious, the prey, which is an embarrassing load in a hurried exploration, is laid in some obvious place on a tuft of Thyme or grass where it can be easily seen when wanted. Freed from this burden, the *Ammophila* resumes an active search. As she hunted about I have traced with a pencil the track made by her. The result was a labyrinth of lines . . . a maze, showing how perplexed and astray was the insect. The shaft found, and the stone (that sealed it) lifted, she must return to the prey, not without some uncertainty when comings and goings have been too many. Although it was left in a place obvious enough, the *Ammophila* often seems at a loss when the time comes to drag it home; at least, if there be a very long search for the burrow, one sees her suddenly stop and go back to the caterpillar, feel it and give it a little bite, as if to make sure that it is her very own game and property, hurrying back to seek for the burrow, but returning a second time if needful, or even a third, to visit her prey. I incline to think that these repeated visits are made to refresh her memory as to where she left it."

This extract shows the style of the translator, as well as that of M. Fabre.

As regards this accomplished Frenchman, we hear that it was from poverty that he rose to his position as naturalist and writer, originality and freshness being peculiar to his work. "His philosophical position," says Mr. Sharp in the preface, "may be briefly stated to be a determined refusal to recognise evolution as a definite idea. In this we may think him wrong; but it must be admitted that his views form a valuable antithesis to those of the many evolutionists who take the position that all that remains for the naturalist to do is to repeat the words Natural Selection and Variation, and declare that thereby we understand the Cosmos."

M. Fabre's dissent from Darwinism seems nevertheless founded, as with other opponents, on an imperfect understanding of certain branches of the theory.

In concluding this notice of a learned book, charmingly written, we must praise the illustrations for being so life-like. To sketch insects at work so as to get a good portrait and get some idea of environment, is always difficult.

BRITISH VEGETABLE GALLS.—An introduction to their study, by Edward T. Connold. (Hutchinson & Co.) Large 8vo, pp. 312; tabb. 130.

THE author of this handsome volume has broached a fascinating subject, and has accumulated a vast mass of information which will be most helpful to the student. The photographic reproductions are numerous and excellent. There are numerous appendices, and a good index. In succeeding chapters the author deals with the nature and appearances of galls, their collection, and method of preservation. As to classification, the author groups these productions under four headings, according as the insects or nematodes affect the roots, stems, leaves, or flowers. The creatures which are instrumental in producing these excrescences are fungi, nematode worms (eel-worms), some beetles, flies, aphides, moths, and wasps.

In view of the great interest of the subject, it would seem as if the life-history of the

creatures, especially of the gall-flies, was scarcely treated with sufficient fulness; but as we are promised a companion volume on the galls of the Oak, the wonderful history of the gall-flies may fitly be included in that volume. In the present volume most of the more conspicuous galls, except those of the Oak, are described, the name of the insect given, the manner and time of growth of the gall, and the time when the perfect insect emerges. We think it is unfortunate that the author has not consulted the volumes of the *Gardeners' Chronicle*, for he would have found several original descriptions and figures by Curtis, Westwood, and others, long antecedent in some cases to those he has quoted. Mr. Connold has done good service by collecting within the covers of one volume details scattered over many books and periodicals, and must assuredly excite interest in a subject of the highest interest.

The Week's Work.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

The Apricot.—Pruning and training, as in the case of the Peach, are usually undertaken in the present month, and as this season in Devonshire gardens the trees will soon be in flower, the necessary work should not be longer delayed. Providing the right kind of treatment was adopted last summer, pruning will scarcely be necessary. Avoid as much as possible the removal of large branches, unless these are dead, as no other stone fruit suffers so much from the use of the saw. Apricot trees are less liable to insect pests than other stone fruit out of doors, which is partly accounted for by the treatment afforded the trees during the summer; be this as it may, the trees at this place have had no insecticide or dressing applied for eleven years, nor has the crop of fruit ever failed. Whilst encouraging the formation of fruit spurs, as it is from these that most of the fruit is obtained, it should be the gardener's aim to keep these as short as practicable, in order that they may receive the benefit of sunheat; do not crowd the spurs or shoots over-much. Well ripened last year's shoots should be laid in entire if not more than 18 inches long, and if it is necessary to shorten them let it be done just in front of a prominent wood-hud. The fruit on these shoots is much finer than on the spurs. In training, as with the Peach, endeavour to regulate the branches so as to equalise the flow of sap on either side of the tree. Good friable loam, with a fair amount of old plaster or lime rubbish incorporated in it if the soil is heavy, light loam receiving less. It is now late for transplanting, but I have carried out the operation when the flowers were on the eve of expanding, as also with the Peach, with excellent results, but I do not advocate late performance of such work.

Strawberries.—If new plantations are to be made in the spring, the land should be heavily manured and deeply dug, burying the manure between the first and second spits. Early in March, in suitable weather, set out the plants 12 inches apart, in rows at 2 feet asunder, making the soil about each plant firm, and mulching between them with strawy manure. A full crop cannot be expected till next year, when every other plant after fruiting should be removed. During the ensuing summer a row of Onions or Lettuces may be grown in alternate rows with the Strawberry plants. The period August and September is the most suitable for making new beds, as then, with strong plants, a fair crop may be reckoned upon the following summer. After giving both methods a trial, I prefer utilising the forced plants, setting out these in May and June 2 feet apart each way, getting a full crop the next season, and after the third crop has been taken, the plants are destroyed, and an equal number put out on a new piece of ground to take their place.

FRUITS UNDER GLASS.

By JAMES WHYTOCK, Gardener to the DUKE OF BUCKLEUCH, Dalkeith.

Vineries.—The Muscat and Gros Colman Vines should be got ready for starting, affording tepid water mixed with manure-water from the cow-house or other source, and then proceed to top-dress the border. If the roots are near the surface in large numbers, the merest scraping with a blunt instrument will suffice; and having removed thus much of the soil, sprinkle bone-meal and Vine-manure over it, and apply finely-chopped turfy-loam 2 inches thick, and on the top of all a mulch of short stable-dung. The cleansing of the house in the usual manner should follow. The night temperature should be 50° when the buds begin to swell, increasing it to 55° in mild weather. Strong fire-heat should be avoided, and lower temperatures rule in very cold weather. These Vines need a 10° higher mean temperature than others. Muscats when in flower to set them successfully need a mean of 73°.

Late Vineries.—Where Grapes are still hanging on the Vines these should now be cut with long pieces of the shoots and kept in bottles of water in the Grape-room. Take care that the bunches hang clear of the bottles and the rack, and that there is a bit of charcoal in each bottle. The Vines being cleared of Grapes may be pruned forthwith. Let all cuts be dressed with styptic, and proceed as with the earlier Vines, removing all loose bark, but not scraping the rods too much, washing them with soap and water, and if necessary, on account of thrips or bugs, painting them with a strong insecticide. Thoroughly cleanse wood-work, look to walls and pipes, and afford water to and top-dress inside borders. If the roots of late vines are not in good condition let the inside border be looked to at once, removing the soil, but carefully preserving the roots, covering them with damp mats. Ascertain the state of the drainage, making it good where faulty, and return the old soil to the extent of $\frac{3}{4}$, mixing with it $\frac{1}{2}$ -inch bones and bone-meal; the top of the border for 1 foot in depth should consist of turfy loam evenly chopped, and mixed with lime-rubbish, bone-meal, and Thomson's or other vine-manure, the whole being well compacted after spreading out the roots evenly—a mulch of horse-droppings may be placed over all. Outside and inside borders should not be disturbed the same year. Follow the same method with outside borders, choosing dry weather for the job, or it may not be successful.

Fig-house.—The Fig-trees in this house are exhibiting fruit and leaves, and the night temperature may be increased to 60°, with a rise of 10° by day, with a moist, growing atmosphere, syringing twice daily. If thrips are visible on the foliage, spray with XL-All insecticide. The roots of the Fig should be confined to a certain limited space; and if the soil is poor, afford frequent top-dressings of a quick-acting, artificial manure, washing in the same with tepid water, so as to encourage surface rooting, fine fruit, and foliage. Another Fig-house may be started, with a temperature of 50° at night and 60° by day, syringing the trees and damping down as the weather may render necessary.

Succession Peach-house.—If the trees are in flower or nearly so, little fire-heat will be needed in mild weather, and 55° in the daytime being enough with air admitted at the top of the house night and day. If the weather is dull and rainy, use fire-heat so as to increase the warmth 5°, or with sun-heat 15°. Use a camel's-hair pencil to distribute the pollen from trees on which it is plentiful to others upon which it is scarce. Damp down the paths, &c., occasionally. The pruning and cleansing of the trees of scale, thrips, or red-spider in the later houses should be finished before the buds become prominent, and the trees dressed with XL-All; also the woodwork and walls cleansed with a strong soft-soap and petroleum wash.

THE FLOWER GARDEN.

By R. DAVIDSON, Gardener to EARL CADOGAN, Culford Hall, Bury St. Edmunds.

Lawns.—Lawn-tennis courts, croquet and bowling-greens should have all coarse weeds extirpated, and a dressing of bone-meal applied at the rate of 3 cwt. per acre, and over this some finely-sifted rich loamy soil half-inch in depth. Should the grasses on some portions be thin, sow early in March fine lawn mixtures at the rate of 1 bushel per acre, making the seed into the turf and covering it with some sifted loam, rolling it frequently. A bowling-green should be frequently top-dressed thinly with fine river-sand, and be swept thoroughly in order to maintain an even surface, rolling being an almost daily necessity. The ordinary lawn should be freed from weeds and coarse grasses, very bad places being returned. Where there are subsidences, strip off the turf, fill in with loam, make level, and replace the turf, beating and rolling it when it is not in a frozen state. Turf under trees that is weak may be top-dressed with rich soil; and in March grass-seeds of strong-growing kinds may be sown. A net will probably be needed to protect such patches from birds, and treated in the manner described above. If labour and expense are of no consequence, relay with new turf. Lawns which contain much moss should be well scratched with a close toothed-iron rake or a patent moss-grubber, the moss collected and wheeled away, and a top-dressing of superphosphate of lime one-half, kainit one-quarter, nitrate of soda one-quarter, applied to the amount of 3 cwt. per acre, and over this strew loam to the depth of half an inch. Sow seeds if necessary. Grass slopes and banks with a S. and S.W. aspect which have suffered from last year's drought may either be sown or turfed; if the latter, the spaces between the turf must be filled with fine soil, and the turf-beater vigorously used. Grass verges may be relaid, but the cutting of the edges should be deferred till April.

THE KITCHEN GARDEN.

By T. TURTON, Gr. to J. K. D. WINGFIELD DIGBY, Esq., Sherborne Castle, Dorset.

Peas.—As soon as the state of the ground will admit of being trodden upon, sow second early varieties in quantity according to the demand, including that excellent early but somewhat delicate variety Exonian. Of second early marrowfat Peas, it will be difficult to excel Duke of Albany, Criterion, and Webb's Senator, the last-named being apparently but little known. It must be quite ten years since I first grew this variety, and yet I have looked in vain in other catalogues than Messrs. Webb & Son's for the variety; but considering its good cropping properties, it is a wonder that the price of the seed should keep at so high a figure. The drills for Peas growing to a height of 5 feet should be at the least 6 feet apart. Let them be taken out with the spade, and when the seeds are covered at this date, the drills should not be quite filled, and they should be kept deeper as the season advances, so as to facilitate the application of water at the root, and generally to avert the necessity for it. I still adhere to the practice of sowing over the Celery-trenches, which were dug out at 5 feet apart, and to sowing the dwarf varieties alternately with the taller ones. If mice attack these early sowings, set traps forthwith, or much damage may be done. One or two good cats kept in a kitchen garden save the gardener much worry and loss of seed by these pests.

Spring Cabbage.—Set out plants from the sowings made in August. In these gardens, land that was occupied by Beetroots and other root crops was bastard-trenched and well manured early in the winter, and the more forward plants set out, and others as they become fit will be planted. These plots adjoin those planted at the end of the month of September, and will form a succession to them, and the crop will be cleared off in time for planting Brussels Sprouts, which are grown in

quantity here. The ground will receive no further preparation for these last beyond cleaning and drawing deep drills with the hoe in which to plant. The Cabbages now planted may stand 21 ins. apart from row to row, and 15 ins. in the rows. In districts where the Turnip-flea is troublesome, Cabbages planted now from the late autumn sowings are more satisfactory than those from spring sowings: hence a separate border or piece of ground should be planted, where they can stand for supplying heads during the summer, and a crop of greens from the stumps during the autumn and early winter months.

Shallots and Garlic.—As soon as the ground is in a fit state, plant these bulbs without delay in well-prepared ground and open position. Give the ground a light dressing over of soot, and unless the soil is very light, a heavy dressing of charred garden refuse as well. Plant in beds 4 feet 6 inches wide good-sized cloves, at 9 inches apart, pressing them sufficiently deep to prevent disturbance by worms or when roots form.

General work.—Lift Salsafy, Parsnips, and Carrots which have been left in the ground. The Salsafy and Parsnips must be replanted close together on a border facing the north, so as to keep them in good condition as long as they are likely to be in request. The Carrots may be banked up against a wall in sand or light soil, preferably in an open shed facing north, or in the coolest place available, and stored in this manner they will keep till late in the spring.

THE ORCHID HOUSES.

By W. P. BOUND, Gardener to J. COLMAN, Esq., Gatton Park, Reigate.

Repotting and Potting.—In potting imported plants they should be made shapely by removing some of the back pseudo-bulbs, and the size of the pot or pan should correspond not so much with the number of pseudo-bulbs, as with the number of the leads. When potted make the plant secure by fastening the pseudo-bulbs to sticks, which, if the crocks are placed upright in the pot, can be made quite steady. The potting being finished, very little water should be applied till new roots have seized upon the compost, and the air should be kept moist, and damping down frequently done between the pots.

Brassavola nodosa grandiflora.—This plant is developing its flowers, and will require a fair amount of water at the root. The Cattleya-house is generally suitable for Brassavolas, and they should be so arranged that they may receive more sun than most Cattleyas will endure.

Brassavola Digbyana.—This plant is showing signs of growth, and any plant that requires repotting or top-dressing should be taken in hand. A suitable kind of compost consists of turfy peat two-thirds; chopped-up sphagnum-moss one-third, mixing these ingredients together. The drainage should be ample. At Gatton the Brassavolas grow best if suspended near the glass. While the plant is growing it will take a fair quantity of water, but the compost should be decidedly dry before water is afforded. On sunny days an occasional syringing is of benefit to the plant.

Zygopetalums.—The species Mackayi, crinitum, and intermedium, having passed out of flower may need repotting, and the potting mixture may consist of turfy-loam two-thirds, leaf-mould one-third, and crocks broken small should be added if the loam is heavy. Pot the plants firmly, and keep the base of the plant just below the rim. The drainage should be ample, so as to allow of the rapid passage of the large quantity of water which has to be applied when the plants are growing. All of the old leafless pseudo-bulbs should be removed, with the exception of those on plants which have got into a bad state of health, and perhaps have only leaves on the last pseudo-bulb, upon which it is prudent to leave two more pseudo-bulbs. Zygopetalums are pro-

perly inmates of the intermediate-house, and stand in need of a fair amount of light and sunshine. After being repotted, no more water is required than will just keep the materials slightly moist, but when there is more sunshine water may be freely applied. The black spot frequently seen on these plants arises, I believe, from affording the plants too much shade, and too close an atmosphere. It may be stated that no disturbance of the plants should take place unless it is actually required, although it is good practice to divide a few very large plants annually. The Zygopetalums, of which Z. Mackayi is a type, are very desirable for winter display, and the flowers make good material for cutting.

Epiphronitis Veitchi ×.—A pretty hybrid between Sophronitis grandiflora and E. radicans is now in flower here. The plant requires to be placed at the cooler part of the Cattleya-house, and during bright weather it should be kept well syringed. This variety, like E. radicans, is seldom out of flower, so it is advisable if the plants are not growing freely to remove the flower-spikes sometimes. Potting may be performed at almost any season when a plant requires it, in a compost of sphagnum-moss two-thirds, and peat-fibre one-third. They can be propagated in the same way as E. radicans.

PLANTS UNDER GLASS.

By J. C. TALLACK, Gardener to E. MILLER MUNDY, Esq., Shipley Hall, Derby.

Gloxinias and Achimenes.—The tubers should now be shaken out of the soil, and the first-named repotted at once, no water being applied until growth begins; and the second covered with sand and allowed to make 2 inches of stem-growth before being potted or put into baskets. Gloxinias do best in stove-heat from the start, but Achimenes will succeed in a vinery or other fruit-forcing house in the early stages of forcing.

Hydrangea.—The stems of H. paniculata should be cut down to the base, and only a limited number of shoots allowed to form, the fewer the shoots the finer being the flower-heads. H. Hortensia should, on the other hand, be only deprived of its weakest shoots, which should be cut back to the basal buds; last year's strong but flowerless shoots being retained for this year's flowering.

Zonal Pelargoniums.—Although for use in a cut state the zonal Pelargoniums are not very suitable, they are of value for winter flowering, and their brilliance of colour is hardly matched by that of any other plant. In order to obtain plants for winter flowering an early start is necessary, and cuttings should now be inserted singly in 3-inch pots, and placed on a sunny shelf near the glass in an intermediate-house. The cuttings should consist of shoots taken from plants that have been occupying a similar position, and not from attenuated specimens from the conservatory, the shoots of which have become soft and drawn. When choosing varieties, let them be those that have the character of flowering well in the winter, summer flowerers being not as a rule good at that season.

Pot Roses.—Where but a limited number of pot Roses can be forced, the season of forcing must be governed by one's special needs. H. P.'s take from eight to ten weeks to come to perfection when not hard forced; Teas a little less, and on these lines calculations should be based, bearing in mind that the harder the forcing the poorer the flowers. H. P.'s may be fairly hard-pruned, Teas rather less so, but in each case all growth too weak for flowering should be removed. A gentle-hot-bed made of tree-leaves and stable-dung is very useful, affording a moist heat, and the slight amount of top warmth needed at the first, which should not exceed 50° as a maximum. The chief enemy of pot Roses is mildew, and the most rational method of fighting which is to observe great care in not giving an excess of ventilation, indeed during the earlier stages it is wise not to ventilate much, if at all.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.
Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions, or to return the unused communications or illustrations, unless by special arrangement.

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY, FEB. 19. { Royal Botanic Society's Meeting.
 at 12.
 { Linnean Society's Meeting.
 THURSDAY, FEB. 20. { West of England Chrysanthemum Society's Annual General Meeting at Plymouth.

SALES FOR THE WEEK.

MONDAY, FEB. 17.—Hardy Border Plants, &c., by Protheroe & Morris, at 12.
 WEDNESDAY, FEB. 19.—Consignment of Japanese Lilies, Plants, &c., by Protheroe & Morris, at 12 and 5.
 THURSDAY, FEB. 20.—Rose-Trees, Azaleas, Begonias, Irish Ivies, Lilliums, Ferns &c., at Pollexfen & Co.'s Rooms, at 12.30.
 FRIDAY, FEB. 21.—Plants, Bulbs, &c., at 12, and Orchids, at 12.30, by Protheroe & Morris.

(For further particulars see Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick—39° 3'.

ACTUAL TEMPERATURES:—

LONDON.—February 12 (6 P.M.): Max. 30°; Min. 21°.
 February 13.—Fine; cold. Wind N.N.E.
 PROVINCES.—February 12 (6 P.M.): Max. 41°, Scilly
 Min. 24°, Cambridge.

THE annual meeting on Tuesday last passed off satisfactorily. The proceedings followed very closely the forecast we were able to make last week. Sir TREVOR LAWRENCE's speech is reported in full in another column.

The question of a site for a new exhibition-hall, with offices for the Society and other horticultural bodies, was alluded to, but was not gone into in detail, as the negotiations are not in a sufficiently forward state to be made public. It is hoped that, provided no legal or other difficulties arise at the last moment, the arrangements proposed will be as satisfactory as circumstances will permit. In the meantime, there is really no reason why more might not be done in the present Hall at little cost and trouble for the comfort of the lecturer and audience than is at present the case.

LINNEAN SOCIETY.—On the occasion of the evening meeting to be held on Thursday, February 20, 1902, at 8 P.M., the following papers will be read:—I. (A.) "On some Gasteropoda (Limnætrochus and Chitra)," from Lake Tanganyika, with the description of a new genus. (B.) "On the Nyassa vivipara, and its Relationship to Neothauma," by Miss L. DIGBY. 2. "On the Fruit of *Melocanna bambusoides*, an Exalbuminous Grass," by Dr. A. STAPP, F.L.S. 3. "On a West Indian Sea Anemone, *Bunodeopsis globulifera*," by Dr. J. E. DUERDEN.

NATIONAL ROSE SOCIETY.—At the meeting held on the 11th inst., the retirement of the Rev. H. H. D'OMBRAIN from ill-health was announced. Mr. D'OMBRAIN was the founder of the Society, and his retirement will be felt as a severe personal loss by the members of the Society.

NATIONAL DAHLIA SOCIETY.—The annual general meeting of the Society will be held, by permission of the Horticultural Club,

in their Rooms, at the Hotel Windsor, Victoria Street, Westminster, S.W., on Tuesday, February 25, at 3 P.M. Agenda:—Report and balance-sheet for 1901; election of officers; other business. J. F. HUDSON, Hon. Sec. The committee will meet at 2.30 P.M. on the same date to prepare the Report for submission to the annual meeting, and to transact other business.

HORTICULTURAL CLUB.—At the annual meeting of this useful Institution, which may be described as the social centre of almost all the metropolitan horticultural societies, the resignation from ill-health of the secretary and founder, the Rev. H. H. D'OMBRAIN, was received with great regret. It was agreed that in future the subscription be reduced from £2 to £1 1s. Mr. E. T. COOK was unanimously appointed secretary, as from next July. Mr. H. J. VERTCH was appointed treasurer, and kindly consented to carry on the duties of secretary until Mr. Cook took up his appointment. The President, Sir JOHN LLEWELYN, Bart., was chairman at the annual dinner.

"BOTANICAL MAGAZINE."—The plants figured in the February number are:—

Moutrichardia aculeata, Cruger, tab. 7817.—A noble west tropical Aroid, with erect stem, stalked hastate leaves a foot long, and a white open spathe, about 8 inches long, encircling a thick cylindric white spadix. Kew.

Plectranthus Mahonii, N. E. Brown, tab. 7818.—A perennial labiate herb from Mt. Zomba, lat. 15½ S. The leaves are stalked, ovate, the numerous violet flowers in terminal racemes. Kew.

Minkelsia biflora, Hemsley, tab. 7819.—A Mexican Leguminous plant, allied to *Phaseolus*, but with longer calyx-lobes and more elongated petals. The plant is of climbing habit, with trifoliate leaves, the leaflets ovate. The flowers are on long stalks, and are remarkable for their large orbicular violet side-petals or wings, which exceed in size the standard. The genus is named in compliment to Dr. Minkels, of the University of Louvain. Kew.

Calathea crocata, E. Morren, tab. 7820.—See *Gardeners' Chronicle*, 1900, vol. ii., p. 113, f. 29.

Solanum Xanti, A. Gray, tab. 7821.—A native of S. California, remarkable for the variability of the foliage, though this feature is not remarkable in the specimen figured. The flowers are in terminal clusters, of a light violet colour. Cambridge Botanic Garden.

"THE COUNTRY."—A new illustrated monthly journal is to be published under this title. Mr. HARRY ROBERTS is the editor, and J. M. DENT & Co. the publishers. Descriptions of famous gardens are to constitute a feature.

UGANDA.—In Mr. WHYTE's opinion, this country will form an excellent Coffee and Tea-growing district, and most European crops will do well. Rubber from species of *Landolphia* and *Strobilanthes* (?) may be obtained with facility. *Tropical Agriculturist*.

ROYAL SEEDSMEN.—Messrs. DANIELS, BROTHERS, seedsmen and nurserymen, Norwich, have been appointed seed growers to His Majesty the KING.

KING EDWARD'S TREE.—In the New York Central Park, we are informed, there is an Oak tree which was planted by King EDWARD. It is small and very crooked, and was planted over forty years ago, on the occasion of the KING's (then Prince of WALES) first and only visit to the United States.

CAMBRIDGE BOTANIC GARDEN.—We have received a copy of the *Exchange List of Seeds* issued from the Botanic Garden of the University. It is an extensive list, and as it is signed by Mr. R. IRWIN LYNCH, the correctness of the nomenclature may be depended upon.

IRISES.—Mr. LYNCH, the Curator of the Botanic Garden, Cambridge, desires to make a special study of the genus *Iris*. He would, therefore, be extremely grateful for any flowers, not of the quite commoner kinds, which might be sent him. He would be happy to name them if required.

SALE OF POISONS.—At the Council meeting of the Royal Agricultural Society, held on Feb. 5, the question of the sale of poisonous substances used for agricultural or horticultural purposes was brought forward by Mr. BOWEN-JONES:—

"The Chemical Committee of the Royal Agricultural Society were of opinion that it was necessary (a) That Schedule A. of the Act of 1868 should be more strictly defined than at present; for example, the first item, 'Arsenic and its preparations,' might be held at present to cover sheep-dips, weed-killers, Paris green—for fruit-trees—arsenical soaps, and other articles used in agricultural operations, which were totally unconnected with pharmacy, and were not required to be dispensed, being already prepared in the form in which they are used by the public. Such articles should either be excluded from Schedule A. or otherwise excepted from the provisions of Section 15 of the Act. (b) That the power at present given under Section 2 of the Act to the Council of the Pharmaceutical Society to declare by resolution that 'any article in such resolution named ought to be deemed a poison within the meaning of the Act of 1868,' should, as regards agricultural and horticultural articles, be only exercised with the previous approval of the Board of Agriculture. With regard to the second reference to the Poisons Committee, 'to consider whether a third subdivision might not be added to the schedule, containing substances which, whether sold by pharmaceutical chemists or not, should be labelled or otherwise distinguished,' the Chemical Committee thought it would be reasonable that any vendor of what for convenience might be called 'agricultural and horticultural poisons' should be allowed to do so, provided he sold the article in the condition in which he received it from the manufacturers, the packet, bottle, or other receptacle being kept intact and unopened, and marked outside with an indication of its contents, and of the poisonous nature of the substance. The specific articles to be included in this third subdivision should be clearly stated in the schedule. In the case of the more virulently poisonous of such preparations, the same precautions as defined in Section 17 of the Act of 1868, as to a register of sales, &c., might also be prescribed; but otherwise there should be no restrictions or monopoly in the sale of poisonous substances used in agricultural or horticultural operations."

Whatever may be done, it should be made imperative in the general interest that the articles in question be sold in carefully sealed packages, and the poisonous nature of the contents should be clearly denoted on the package. At present this is not done, at least not in all cases. The same or similar restrictions as are now imposed on chemists who sell these substances should be imposed on vendors generally.

"BEES."—This is the title of a "journal devoted to up-to-date bee-keeping," the first number of which was published in January. Enthusiasts in the industry should read all available literature relating to it, this publication included. We note that the Editor invites correspondence from readers on all subjects connected with bee-keeping, and these should be addressed to Mr. E. A. GEARY, 26, Oxford Road, Upper Norwood, S.E. *Bees* is illustrated, and is planned to be issued monthly, at the price of 2d. a copy.

EELWORMS IN CHRYSANTHEMUMS.—In the *Comptes Rendus* of the Académie des Sciences, January 20, is a note by M. CHIFFLOT on the disease in Chrysanthemum foliage, caused by nematode worms of the genus *Aphelenchus*. The remedies suggested are: to burn the affected foliage; to prevent contaminating the soil used in repotting by taking care not

to throw on it infected leaves, &c.; as far as possible to sterilise the soil; to make use of artificial rather than of natural manures; and to take cuttings only from healthy plants.

DUST.—In a recent communication to the Society of Arts, dealing with observations made in a balloon at high altitudes, the Rev. M. I. BACON thus alludes to the subject of dust:—

"I commenced with collecting samples of dust from air which had passed over a large tract of sea. For this purpose I chose the Scilly Isles, where never mind whence the wind might blow it was easy to find a rocky rampart, which caught the first blast off the ocean. Keeping these as standard results labelled according to the directions of those winds which had given them, I next compared them with results similarly obtained inland on open commons, in different quarters of London, and so on, finally transferring the experiments to the car of the balloon. As may be supposed, the sample freest from matter in suspension was gathered in the Scilly Islands. It is likewise true that the most dust-laden sample was also collected from the opposite cliff of the same island (St. Mary's), the explanation of which when discovered was instructive. The island of St. Agnes lay a mile to windward, but its whole area was so small that I had regarded it as negligible. On visiting the island, however, I found it entirely carpeted with flowers grown for market, and then in full bloom, whose pollen, borne on a fresh breeze, had not only loaded but stained the spirit in the test-bottle.

"One of the clearest samples in the whole series was secured at the open end of the Aldersgate platform of the Metropolitan Railway, the explanation presumably being attributable to the passing trains attended with volumes of steam which emitted under the roof would entrap and cleanse out the dust. But another state of things was found aloft. On a still afternoon on May 1, at 2,000 feet above Kingston, the air was found far more heavily charged with dust than that of the London streets the next day. So again at half a mile above the City in August last the dust, though somewhat less in quantity, was far more abundant than on the ground within the enclosure of Stamford Bridge in the forenoon of the following day."

NEW PUBLIC RECREATION GROUND AT GILLINGHAM, KENT.—In a public competition for the best design for laying-out the above, Messrs. WILLIAM BARRON & SON, landscape gardeners, of Elvaston Nurseries, Borrowash, were awarded the first prize.

NATURE-KNOWLEDGE.—Nowadays there is a marked tendency to teach children less by books and more by object-lessons. The seed that Prof. HENSLOW sowed half a century ago at Hitcham is bearing fruit in places widely remote from that Suffolk village. Some papers reprinted by Mr. WILFRED and Miss ETHEL WEBB from *The Record of Technical and Secondary Education*, 1901 (MACMILLAN & Co.), are very interesting as showing what may be done to interest children, and stimulate and guide that faculty of curiosity which almost all children have, but which is too often disparaged rather than encouraged.

PRUMNOPITYS ELEGANS.

[SEE SUPPLEMENTARY ILLUSTRATION.]

THE demon of synonymy at once arises in the case of this plant. A beautiful illustration was sent to us from Penjerriek under the name *Podocarpus andina*. Those who consider the plant to be a *Podocarpus* will continue to use this name, but there are many of a different opinion, and who call the plant, some *Stachycarpus*, some *Prumnopitys*. In the list of Conifers published in the Report of the Conifer Conference, which is the fullest authoritative list of cultivated Conifers that we have, the name of *Prumnopitys elegans* of Philippi is adopted, as it was by Lindley, *Gardeners' Chronicle*, 1863, p. 6; Carrière, Veitch, and the compiler of the *Kew Hand-List*. The *Kew Index*, however, calls our plant *Podocarpus affinis*, which is probably a mistake, for *P. affinis* is a Pijian plant, described by Seemann.

In the Conifer Conference list the differences between our plant and *Podocarpus* are shown to consist in the fruits being placed on a loose, slender woody spike, instead of solitary on a fleshy stalk; whilst the anatomical structure of the root is, according to Van Tieghem,* different from that of its near allies. In the last edition of Veitch's *Manual*, p. 155, fig. 54, is given an illustration of a fruiting branch, which shows how different the plant is from the true *Podocarpus*.

Prumnopitys elegans inhabits the Andes of Southern Chile, and was introduced thence by Pearce on behalf of Messrs. Veitch. It is hardly over the greater part of Great Britain, but, says Mr. Kent in Veitch's *Manual*, it grows most freely in the south-western counties of England and in Ireland. Its foliage is Yew-like, dark green above, slightly silvery beneath, the individual leaves linear, oblong, acute, with a midrib prominent on both surfaces. The berries are about 1 cent. long, oblong, ovoid, rounded, with a fleshy red or purplish aril nearly covering the hard, bony seed. We believe the shrub to be quite hardy, and, as far as we have seen, it is not very particular as to soil; but it is so attractive a plant that it is worth a little special attention. It makes a good plant for a window or outside balcony, which is a pretty good proof that its requirements are not very exacting.

Lindley, quoting Philippi, describes the fruits as yellowish-green, but those we have seen have been reddish or purplish. The berries are edible—perhaps by those who can get nothing better.

A similar tree occurs in the same district, viz., *Podocarpus nubigena* (fig. 34), also introduced by Messrs. Veitch from Valdivia, by Mr. W. Lobb. It is a true *Podocarpus*, with linear, very pointed leaves, about 4 cent. long. Mr. Acton, of Kilmacurragh, Rathdrum, Ireland, furnished us in 1891 with specimens bearing male flowers, which up to that time had not been described (see *Gardeners' Chronicle*, August 8, 1891). The same native name, "Maniu," is said to be given to both plants. M. T. M.

CRINUM MOOREI AND C. POWELLI.

MR. GUMBLETON writes:—"I have read with considerable amazement the statements on p. 98 of your last issue, made by your correspondent Mr. J. Murison, as to the origin of these fine plants, which he asserts were both raised by my old friend the late Dr. David Moore, the Director of our Irish Kew at Glasnevin. I do not think that these statements are at all in accordance with facts, as I do not believe that he raised either of them. I have always heard that *Crinum Moorei* was sent to Dr. Moore from Natal as an unnamed species, which he was asked by the sender to allow to bear his name, as the first to bloom it in Europe. *Crinum Powellii* × was raised some twenty or more years ago by my friend Mr. C. B. Powell, of The Old Hall, Southborough, Tonbridge, by crossing the tender *C. Moorei* with the hardy *C. capense*, or longiflorum, and was distributed for him in three colours, named respectively *C. Powellii*, deep rose colour; *C. P. intermedium*, pale pink; and *C. P. album*, pure white, by Messrs. Henderson & Son, of Wellington Road, St. John's Wood, the site of whose nursery now forms a part of Lord's Cricket-ground. My memory of all these facts is so clear, from having grown all these plants since their introduction most successfully, that I hope my friend, the present Director of

Glasnevin Gardens, will bear me out in their correctness when he sees my letter in your columns. W. E. Gumbleton, Queenstown."

— In the *Gardeners' Chronicle* of the 8th inst., a correspondent gives us some special information about the above two varieties of very useful bulbs, which he says were "produced" over thirty years ago by Dr. David Moore. I saw *C. Moorei* at Glasnevin thirty-five years ago, growing out-of-doors, and in splendid health and condition, as nearly all the plants generally were in that pretty garden whilst Dr. Moore had it in his charge. Now, if your correspondent can give us the history of the "production" of *C. Moorei*, I am in the position of being able to do so in the case of *C. Powellii*. Not that this is necessary with readers of the *Gardeners' Chronicle*, for since 1881 it must have been repeated five or six times, and likewise by Mr. Burbidge in No. 949 of *The Garden*, in 1890, where a coloured illustration of it is given. The seeds of *C. capense*, crossed by the pollen of *C. Moorei*, were sown about 1875 in Bury St. Edmunds, and the young plants the following year were at once pricked out in a row out-of-doors, where they remained till I left Suffolk in 1880. They were sent up to London to Messrs. E. G. Henderson & Son, of The Pine-apple Place nursery, who began to dispose of them in the following year. Whilst in Bury, all the bulbs had not bloomed, for the white variety flowered first at Pine-apple Place. Seeds were saved from both "*C. capense album*," and the ordinary pink kind, but strange to say, the deeper-coloured varieties of *C. Powellii* were produced by the seedlings of the white variety. I would hardly have troubled you with these details, only that any accurate information about matters connected with the Cape cannot be too often repeated. C. B. Powell, Southboro'.

— Your correspondent has fallen into error about the history of *Crinum Powellii* ×. *Crinum Moorei* was first raised and flowered at Glasnevin, and is from Natal. *Crinum Powellii* × was raised in England by crossing *Crinum Moorei* with *C. capense*, the raiser of this fine plant being Mr. Powell, after whom it is called, and not after a foreman at Glasnevin, your correspondent evidently confusing the names Powell and Pope. There are varieties of both *Crinum Moorei* and *Crinum Powellii* ×, ranging from pure white to deep rose, each variety having its distinctive charm, and all being attractive. These *Crinums* are perfectly hardy, provided only that they are deeply planted; the whole neck of the bulb should be underground, so that sometimes it is from 2 to 3 feet from the surface of ground to base of bulb. F. W. Moore, Glasnevin.

[Other correspondents have addressed us to the same effect, which induces us to repeat the history of these plants in question. *C. Moorei* was described first by Sir Joseph Hooker in the *Botanical Magazine*, t. 6113, from a specimen sent by Dr. Moore, of Glasnevin, after whom it was named. It was also figured in the *Gardeners' Chronicle*, 1887, ii., fig. 101. It was first made known by a sketch made in Natal by the late Bishop Colenso. It is comprised under the same name by Mr. Baker in his *Handbook of the Amaryllidaceae* (1888), p. 93, and in the *Flora Capensis*, vi., 200. A coloured figure was also given in the *Garden* for 1881. *Crinum Powellii* × is a hybrid between *C. longifolium* alias *capense* and *C. Moorei*, botanically described in Baker's *Handbook*, p. 95, and also in the *Flora Capensis*, vi., 202. A notice of the plant is also given in the *Florist and Pomologist*, 1884, p. 155. Ed.]

* Bull. Soc. Bot. France, 1891, p. 163.

HOME CORRESPONDENCE.

PINANGA VEITCHI, WENDLAND.—I was very much struck by the beautiful picture of *Pinanga Kuhlji*, Blume, as it grows at Buitenzorg, in the *Gardeners' Chronicle*, February 8, and by Herr Udo Dammer's remarks at p. 97 on *Pinangas* generally. I wish all the species were as free-growing and as vigorous and satisfactory as he therein declares them to be. There is at least one exception in the genus which has so far, I believe, defied the best efforts of good cultivators to keep it alive in our hot-houses here in England, viz., *P. Veitchi*, a very handsome dwarf species with beautifully coloured foliage, which I introduced from Borneo for Messrs. Veitch, of Chelsea, about twenty-four years ago. As growing in Borneo, on the forest floor in reflected light amongst steel-blue Ferns and *Selaginellas*, it formed one of the most beautiful dwarf-growing Palms I ever saw; but it defied all efforts to develop its beauty in English gardens. I presume Herr Dammer has not had any experience of this species? *F. W. Burbidge, Dublin.*

KERRIA JAPONICA AS BACHELOR'S BUTTON.—On reading the article "What is the Bachelor's Button?" in your issue of the 1st inst., I was much struck by the omission of *Kerria japonica*, which I have from my youth known as Bachelor's Button. This may be due, perhaps, to its comparatively recent introduction, and therefore no allusion to it is made in the older works. *Charles Dennis, Hopedene, Holmby St. Mary.*

HYBRID ALPINE IRISES.—Quite recently considerable prominence was given to what was described at the time a "new race of hybrid alpine Irises" (see *Gardeners' Chronicle*, November 30, p. 397). Judged by the text, and by the excellent illustration, the reader had every reason to believe that there was a new and greatly-improved race of these hardiest of hardy plants. On Tuesday last at the Drill Hall, what I imagine to be representatives of this new race were placed before the Floral Committee in the most deplorable condition. All that was before the committee was the merest handful of flowers, crushed and bruised almost beyond recognition, and as far as is known, with not an atom of information to guide even those closely interested in such things. It is simply impossible for the above committee to know anything concerning new hybrid races of plants, unless it be given direct information. In a case such as this, the Irises should be shown in the growing state in pans or pots, so that the natural growth and other characteristics may be seen. *E. F. Jenkins, Hampton Hill.*

PEAR PRESIDENT BARABE.—In your report of a recent Royal Horticultural Society meeting at the Drill Hall, you allude to a small exhibit of the above variety as having been awarded a Cultural Commendation. This reminds me that I have very lately been enabled to partake of some fruits of this grand winter Pear, as grown by Mr. Allan; and I have no hesitation in saying that, taking all points into consideration, it is the best-grown Pear of its season in this country. The flavour is rich, the texture of the flesh melting, above middle size, and handsome in appearance. There is just the slightest tendency to grittiness towards the core in an occasional fruit, but this is scarcely worth mentioning. A great point is, that the flesh is sound at the core even when the skin has the appearance of decay, so that the gardener need have no fear when dishing up the fruits for dessert. I am not writing from one trial only, as I have had the opportunity of testing it for three seasons at the least. The best fruits Mr. Allan grows are obtained from shoots grafted on the free-growing and good *Conseiller de la Cour*, and this offers a method to those who may wish to try the variety, and can obtain shoots fit for grafting. I would suggest that it be worked on the wilding Pear stock, or on

some strong-growing Pear, and not largely on the Quince until its capabilities have been tested. On a strong-growing stock it will grow strongly and become fruitful at an early age. *J. C. Tallack.*

CANNA ITALIA.—Your correspondent "W. T. G." cannot have had the true *Canna Italia*, which he says has given him seeds. This hybrid, as well as all the other hybrids (about thirty) of the Orchid-flowering Cannas raised by Mr. Sprenger, at Naples, has, in spite of all efforts, remained perfectly sterile. The ovaries swell, but they continue to be hollow. The same has been observed in Spain, Portugal, and the south of France, while there has never appeared anything about production of seeds in the horticultural papers; and so in the seed trade, you will never find them offering these Orchid-flowering Cannas. If this is the case, how could it be possible that this *Canna* has produced seeds in England, where the climate is by no means so favourable as in the above-named countries? I am afraid one



FIG. 34.—*FODOCARPUS NUBIGENA*: SHOWING MALE CATKINS.
Separate anther, magn. 10 diam.; pollen grains magn. 240 diam. (See p. 113.)

must leave the decision of this question to a microscopical examination, which will prove that the pistil is crippled and unable to fulfil its function. *William Müller.*

PRIMULA MEGASEÆFOLIA.—In the Rev. C. Wolley-Dod's interesting note on the above plant, he refers to the uncertainty in its season of flowering as being a drawback to its open-air cultivation in England. I have it flowering well in a cold frame, and also out in the open, and of the two, the plants on the rock garden look the better. They have withstood 18° of frost uninjured, and are now looking thoroughly at home. Carl Sprenger gives the flowering season as being winter, autumn, and May. I can speak for its winter-flowering, but it remains to be seen if it will flower in May and autumn. The plant, for which I was given a R.H.S. award last April, sets its seeds well, and is a strong plant, in full flower now. *E. Willmott, Warley Place.*

CATERPILLAR OF THE GHOST-MOTH.—At the last meeting of the Scientific Committee of the Royal Horticultural Society a caterpillar was exhibited, found on the roots of a *Præony*, and said to belong to the genus *Hepialus*. These caterpillars are a nuisance in my garden, injuring, and even destroying some of my

Michaelmas Daisies, by eating the young fibres of the roots. They lodge in or just beneath the woody root-stalk, and under its shelter they move about feeding on the incipient growth. If I dig up a dozen pieces of Michaelmas Daisies probably half of them contain two or three or more of these soft and colourless semi-transparent and ill-looking vermin, more like the larva of a beetle than the caterpillar of a moth. I refer them to *Hepialus humuli*, the Ghost-moth, well known to all observers of Nature, the male being white above and brown beneath, alternately visible and invisible as it flits from side to side like a phantom in the dusk. These moths, of which there are several native kinds in the same genus, are known collectively as "Swifts," and rank next to the *Sphinxes* in classification. A smaller kind, equally common with the Ghost-moth, is named *H. lupulinus*, and is said to have a similar caterpillar, and the same root-eating habit. From their lodgment under a hard roof of root no insecticide can reach these caterpillars, so they complete their growth and transformations in security. *C. Wolley-Dod, Edge Hall, Malpas.*

A FINE SPECIMEN OF CEDAR OF LEBANON.—At Eden Hall, Cumberland, on November 13, 1901, a remarkably fine specimen of *Cedrus Libani* was blown down. It was one of a pair whose size and symmetry had earned for them a local fame. It measured 75 feet in height, and from the base to where the trunk divided into seven large branches it contained 100 cubic feet of wood. The whole tree being computed to contain over 800 cubic feet of wood, the market value of which was no doubt much lessened by its being slightly decayed in the centre. The spread of its branches was about 96 feet, and its age is supposed to be more than 200 years. The soil in which it grew was that covering the old red sandstone. Unlike *Cedrus Deodara* the wood has a very large grain similar to pitch Pine, and is of a much lighter colour. *J. W. Mallinson, Eden Hall, Cumberland.*

ORANGES.—Ladoo is described on p. 209 of my book, *Gardening in India*. The seedless Orange is a form of the Valencia Orange, described in the supplement to the book I send (supplement to p. 210). Out of a dozen Oranges served to me in a shop without selection, four proved entirely without seed. The fruit was from Aleira, and the trademark a scythe. At Poona, India, there is a very fine seedless variety of the Punalu (*Citrus decumana*) in cultivation, and no difficulty is found in its propagation by budding. *G. Marshall Woodrow.*

THE INSECTICIDE XL-ALL AS A WINTER DRESSING FOR GRAPE-VINES.—I have given Richards' XL-All a fair trial for all kinds of insects that infest plants under glass and out-of-doors; and as a winter dressing against mealy-bug on the Grape-vine, I have found it to be the best remedy of any I have used, and quite safe. I need hardly say that it must be used according to the directions given on the bottle. I have used it rather stronger, i.e., one part insecticide to ten of water, for Vines, and at that strength it destroys all the mealy-bugs which are touched by it; but "H. H." must not expect that it will thoroughly eradicate the pest, as there will be many of the insects that the insecticide will not reach, and he will have to keep a sharp look-out for them all through the summer season. For scale on *Codiaeums* and Palms, I use it at the rate of one part to twenty of water as a dip, and about three weeks afterwards I have the plants sponged with it, and the first-named plants do not lose their lower leaves afterwards. For green and black fly, one part to thirty-eight of water is quite effectual, and as a dip for the tips of the young shoots of Peach and Nectarine-trees it is excellent. I have used it as a dip and for syringing forced Roses, Carnations, Chrysanthemums, Cinerarias, Calceolarias, Lilliums, and various other plants. It is more effectual when mixed with warm rain-water. *J. Miskin, Runnymede, Old Windsor.*

"BARE-FOOTED BAIRNS" IN SCOTLAND.—One has read with so much pleasure "R. H. P.'s" interesting articles on a "Visit to the North," that I am rather unwilling to criticise anything. I think however that, like a good many Englishmen who come across the border, he has assumed too readily that the presence of bare-footed children, or even of bare-footed adults, is to be taken as a sign of poverty. I know little about Dalkeith, so am not concerned about its reputation, but would point out that throughout the greater part of Scotland, apart from the larger towns where the naked foot runs many risks, children whose parents are in what may be called comfortable circumstances go bare-footed in summer; while in country districts even the children of the parish ministers may be seen enjoying their freedom from foot-gear. This is for pure pleasure, and is a practice which, apart from economy, has much to commend it, as anyone will see who studies the free and lithe movements of bare-footed children, and contrast them with those of any who wear clogs, which generally give their wearers a slouching gait, or even those who wear shoes. I know well how difficult it is to induce children who have enjoyed the freedom of bare feet during the summer to put on their shoes and stockings when cold weather comes. The impression that the absence of shoes or other attire for the feet is a sign of Scottish poverty is an old one, as will be seen from the works of those who visited our northern land more than 100 years ago. *S. Arnott, Carsethorn, by Dumfries, N.B.* [So far as the above remarks relate to the naked foot in country districts, Mr. Arnott may be correct, but he is wrong in "thinking" that I "assumed" too readily that the practice of running bare-footed in the large towns is associated with more or less poverty, or thriftlessness. Instead of "assuming," I enquired of responsible Scotsmen having to do with the city government in Glasgow and Edinburgh, and the answers given me in both cases agreed with my own observations in the streets. Dalkeith is a borough, and not a country village, and the "bare-footed bairns" there, just as in the mining district of Bailleston, near Glasgow, belong to its least prosperous or least thrifty inhabitants. The custom may be a good one or not, but I heard everywhere, from Scotsmen, that in large towns at least, it is not practised to-day by the middle or upper classes to an appreciable extent. *R. H. P.*].

Obituary.

LEONARD KELWAY.—The *Langport and Somerton Herald* announces the death on February 5, at the early age of twenty-one, of Mr. Leonard Kelway, second son of Mr. William Kelway, of Brooklands. Leonard Kelway was born at Riverslea, Langport, in 1880. He was educated at Sherborne School (Wilson's House), which he entered in 1894, and left in 1898 to join the firm of Messrs. Jas. Kelway & Son.

MR. F. W. FLIGHT.—We regret to record the death of this gentleman, which occurred recently at his residence, Cornstiles, Twyford, Winchester. He was an enthusiastic horticulturist, exhibiting at most of the county shows with great success. The deceased was a member of the National Rose Society, and an exhibitor at times at the metropolitan shows of that society.

MR. F. J. GRAHAM.—The death of this once popular fruit-grower at a great age a few days ago at his residence, Cranford, Middlesex, was recently announced in the daily papers. Mr. Graham had lived in retirement so long, and had reached such a patriarchal age, that he had outlived most of his contemporaries. He was an active member of the British Pomological Society, and on the formation of the *Fruit and Vegetable Committee of the Royal*

Horticultural Society, he was one of its earlier Vice-Chairmen; and was a foremost figure at fruit exhibitions. One of the Apples he grew largely at Cranford for Covent Garden Market was Ronald's Gooseberry Pippin. Dr. Hogg, in his *Fruit Manual*, mentions it as a "very rare fruit," and he "doubted much if it is to be had true in an ordinary way." Mr. Graham's name is associated with his Yellow Perfection Wallflower, of which there is a coloured illustration in the number of the *Florist and Pomologist* for July, 1864. This variety was the result of careful seeding and selecting through many generations; the object sought to be obtained being the production of a variety in which the flowers should be of a pure yellow colour, of large size, good form, and highly fragrant. This fine variety is still to be found in some seed lists, and such present-day yellow Wallflowers as Cloth of Gold and Carter's Old Gold were no doubt derived from it. *R. D.*

MRS. R. BRIGGS-BURY.—It is with great regret that we announce the death of the above lady, at her residence, Bank House, Accrington, Lancs., on the morning of Friday last, February 7, at the age of sixty-two years. The loss, so unexpectedly we might say, of such a generous and enthusiastic horticulturist will be keenly felt throughout the county, for only upon the day previous to her death she was an exhibitor at the meeting of the Manchester and North of England Orchid Society, and expressed her feelings of pleasure at the success she had attained. The chief delight of the deceased lay in her Orchids, which were very successfully cultivated. At her funeral, which took place at Accrington on the 11th inst. amid tokens of sorrow on every hand, representatives of many of the horticultural firms and societies with which the deceased lady was connected, were present.

SOCIETIES.

ROYAL HORTICULTURAL.

FEBRUARY 11.—The meeting of the committees of the Royal Horticultural Society, in the Drill Hall, Buckingham Gate, Westminster, on Tuesday last, was the commencement of the Society's official year 1902-03. The personnel of the several committees was slightly altered, and all round a fresh start was made. A large number of Fellows visited the Hall during the day, and there was a good attendance at the annual general meeting, which was held at 3 p.m., in the Drill Hall, where occasionally the noise was so great the President could not make himself heard; and where little or no provision is made for the comfort of either audience or speaker, a good deal more might be done even at the Drill Hall.

The display of exhibits would have been larger had the weather been less severe, for several exhibits of Orchids and other tender plants were not brought to the Hall for this reason. The ORCHID COMMITTEE alone granted any awards to novelties, and possibly, now that a two-thirds majority is required in every such case, there will be fewer awards than there have hitherto been.

A remarkable exhibit of Apples from Messrs. GEORGE BUNYARD & CO., Maidstone, was honoured by an award of a Gold Medal.

Floral Committee.

Present: Chas. E. Shea (in the Chair); and Messrs. Chas. T. Drury, H. B. May, R. Dean, J. H. Fitt, John Jennings, Jas. Hudson, W. Howe, J. A. Nix, C. R. Fielder, Charles Dixon, Charles Jeffries, R. C. Notcutt, J. H. Barr, W. P. Thomson, E. H. Jenkins, R. Wilson Ker, H. J. Cutbush, W. J. James, H. Turner, Geo. Paul, Ed. Mawley, Chas. Blick, and H. J. Jones.

Clematis indivisa and its variety *lobata* were again shown by Messrs. W. PAUL & SON, Waltham Cross Nurseries, Herts, in a most attractive manner. There were about seventy plants in 5-inch and 6-inch pots, each plant about 3 feet high from the pot, and profusely

furnished with their pretty white flowers and pink anthers from the top of the plants to within a short distance of the base. The growths were tied to a single stake, and doubled back from the top (*Silver Flora Medal*).

Messrs. H. CANNELL & SONS, Swailey, Kent, made an imposing display with Chinese Primulas, more than sufficient to fill one side of a long table. The colours of the flowers were remarkably good, and in size and form, too, they were capital. Some of the best of the florist's varieties were *Swanley Blue*, *The Queen*, white or blush-pink; *Cannell's Pink*, certainly the best of this colour, with large, much-fimbriated petals; *The Sirdar*, rich carmine; *Dr. Nansen*, rich crimson; *Myra*, delicate mauve colour; *Surprise*, purplish-crimson; *Swanley Giant Improved*; *My Favourite*, very free, flowers rather small, rich pink colour, and much fimbriated; *H. Cannell*, one of the most brilliant of the crimson-flowered varieties; *Fern-leaf Blue*; *Snowdon*, large, white; and *Mrs. Kennard* (new), silver and rose coloured, very pretty, and of large size. In "The Lady" strain there were many degrees of crossing exhibited, some of the plants having the pure notched petal of the natural form, and others possessing very slightly fimbriated petals, and larger-sized flowers, but in company with much of the free-flowering habit of the "unimproved" strain. Some of these of note were *Mrs. R. Cannell*, *Queen of Holland*, *Queen Alexandra*, *Fairest of the Fair*, *Red Lady*, *Magenta King*, *Salmon Beauty*, &c. (*Silver Flora Medal*).

Messrs. WM. CUTBUSH & SON, Highgate Nurseries, N., and Barnet, Herts, showed a dozen plants of *Rhododendron Jacksoni* in flower in pots. The plants were full of bloom, and the flowers are pink-coloured, with deeper colour in the centre of each petal.

Coleus thyrsoides was again shown by Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, Chelsea, who brought the same plants that were shown in flower on January 14. They were fast passing when seen on Tuesday, but the exhibit served to show that the species will bloom continuously for a considerable period.

Messrs. VEITCH had also *Rhododendron Early Gem*, very profusely in flower, colour mauve; *Amygdalus persica magnifica*, crimson flowered; *A. Davidiana alba*, exceedingly pretty; and *Loropetalum chinense*, which was shown well by Lord ILCHESTER at the last meeting.

Cyclamens from Messrs. HUGH LOW & CO., Bush Hill Park Nurseries, Enfield, were very good, and exhibited a strain with large flowers, with great variation in colour.

Messrs. JOHN LAING & SONS, Forest Hill Nurseries, London, S.E., exhibited a group of miscellaneous plants, including *Rhododendron indicum* varieties, *Cordylines*, *Codiaeums*, *Palms*, &c.

Messrs. BARR & SONS, King Street, Covent Garden, London, exhibited in a moss-covered mound a number of pots containing hardy bulbous plants in flower, including the newer giant *Snowdrops*, *Narcissus cyclamineus*, *Iris persica*, *I. Heldreichii*, *Muscari*, &c. There were cut flowers of varieties of *Helleborus*, *Anemone tuberosa*, &c. (*Bronze Banksian Medal*).

Messrs. GRO. JACKMAN & SON, Woking Nursery, Surrey, exhibited a few rock-plants in flower, made up in a box to simulate natural conditions. There were *Saxifraga Burseriana*, *Primula Forbesii*, *Cyclamen repandum*, *Polygala chamaebuxus*, *Saxifraga oppositifolia*, *Primroses*, *Iris*, &c., including some nice ones in a pot of *I. mardensis*, which were lifted from the open ground. The colour of *I. mardensis* is silvery-grey, acquiring a purple tint, with a yellow mark along the falls, and a purple blotch at tip (*Bronze Banksian Medal*).

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. Jas. O'Brien (hon. sec.), J. Gurney Fowler, De B. Crawshaw, H. T. Pitt, H. M. Pollett, H. A. Tracy, W. A. Bilney, F. A. Rehder, F. J. Thorne, J. W. Odell, H. J. Chapman, W. H. Young, W. Boxall, J. Douglas, E. Hill, and H. Ballantine.

Messrs. JAS. VEITCH & SONS, Chelsea, were awarded a *Silver Flora Medal* for a very good group of hybrid Orchids, in which their endeavours to produce good yellow-flowering winter-blooming hybrids was well shown in the bright yellow *Dendrobium* x *Ophir* (aurum x signatum), and the floriferous pale yellow *D. x Imogene* (signatum x enosium lencepterum). Sir TREVOR LAWRENCE's yellow *D. Wiganian* x *anthoclitum* was also shown, and *D. x Wardiano-japonicum*; *D. x Cordelia*; *Phalenopsis* x *Hebe* (rosea x *Sauderiana*), *P. x Ariadne* x *Stuartiana* x *Aplrodite*, a fine bunch

of the dark [scarlet form of *Epidendrum* × *O'Brienianum*, *Lælia* × *Edissa* (anceps × *purpurata*), a fine lemon-coloured form of *L.* × *Mrs. M. Gratrix*, *L.-C.* × *Doris* (*L. harpophylla* × *C. Trianaei*), *L.-C.* × *Myra*, *Cattleya* × *Miranda* (*amethystoglossa* × *Trianaei*), and two fine new hybrids enumerated in the list of Awards.

Messrs. CHARLESWORTH & Co., Heaton, Bradford, staged a very effective group for which a Silver Flora Medal was awarded. The centre was made of good varieties of *Lælia* *Mrs. M. Gratrix* of different tints of yellow, and *Lælio-Cattleya* × *Charlesworthi*, with orange sepals and petals and crimson lip. At the end were stands of eut spikes of *Odontoglossum cirrosum* and *Oncidium splendens*; and arranged with them were the handsome spotted *Odontoglossum crispum* "Etoile du Congo"; *O. c. Chestertoni*; *O. x Loochristyense* var. *nobilior*, a fine yellow variety, blotched with brown, the ground colour of the labellum being white; *O. x crispum* *Hallii* *Heatonense*; *Cymbidium grandiflorum*; *Houlletia odoratissima*, the red-brown typical form; and *H. o. flarescens*, a clear yellow variety.

J. COLMAN, Esq., Gatton Park (gr., Mr. W. P. Bound), showed *Dendrobium nobile* *Colmanianum*, a fine large, pure white variety, with sulphur-yellow disc to the lip; *D. x euosmum* "Eleanor" (*x endochlaris* × *nobile nobilius*), a pretty white flower, with rose tips to the segments; *D. nobile albiflorum*, white, with purple centre to the lip; and *D. x Ainsworthi* *Gatton Park* variety, near [*D. x A. intertextum*, but with larger primrose tinted flowers.

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton (gr., Mr. Hudson), showed four fine flowers of *Cattleya Trianaei* "Mariee," a beautiful, large, and perfectly-shaped variety, with silvery-white sepals and petals, delicately tinged and veined with pink, and large labellum, the front of which was of a magenta-crimson tint, the disc yellow, a maroon coloured band extending between it and the front.

The Rev. F. PAYNTER, Stoke Hill, Guildford (gr., Mr. Cooke), showed a pretty hybrid *Cypripedium*, near to *C. x tessellatum* *porphyreum*, with flowers uniformly tinted with reddish-rose, the upper sepal bearing dark purplish lines.

Messrs. HUGH LOW & Co., Bush Hill Park, showed *Dendrobium nobile* *virginale* *Low's* variety, a true *D. nobile*, with large, pure white flowers, having a sulphur-yellow disc to the lip; a free grower and profuse bloomer. Also *Cypripedium* × *insigne* × *bellatulum*.

E. C. BLISS, Esq., Tulse Hill (gr., Mr. Parker), showed a compact specimen of [*Celogyne cristata* with a large number of flower-spikes.

H. T. PITT, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood), showed the singular-looking *Cirrhopetalum appendiculatum*, a Sikkim species, illustrated in the *Gardeners' Chronicle*, December 10, 1898, p. 415; and a pale green species of *Eulophia*.

W. M. LOW, Esq., Wellesbourne, Warwick (gr., Mr. H. Liney), sent *Odontoglossum* × *loochristyense*, "Wellesbourne House" variety. Flower of good form, yellow, heavily blotched with brown.

Messrs. D. DOWEL, horticultural sundriesmen, Ravenscourt Avenue, Hammersmith, showed a varied assortment of Orchid-pans, some of the very small ones being well adapted for seedling Orchids; also potting materials, &c., of good quality.

Awards.

FIRST-CLASS CERTIFICATE.

Lælio-Cattleya × *Queen Alexandra* (*L.-C.* × *bella* × *C. Trianaei*), from Messrs. JAS. VEITCH & SONS, Chelsea.—A magnificent hybrid, surpassing in size, form, and fine colour of its flowers *L.-C.* × *bella* (*L. purpurata* × *C. labiata*), and others of that showy class; the flower being enlarged and broadened by the influence of *C. Trianaei*, the petals especially being very broad and well displayed. The sepals and petals are of a light rosy-lilac, the lip intense ruby-purple, with an orange-coloured disc, behind which are some reddish markings extending to the base; the whole of the front and edges of the side lobes having a very narrow lavender-coloured margin.

AWARD OF MERIT.

Cymbidium × *Lowio-grandiflorum* (*Lowianum* × *grandiflorum*), from Messrs. JAS. VEITCH & SONS, Chelsea.—A very fine hybrid, embodying all the stately characters of *C. grandiflorum* (*Hookerianum*), especially in its broad, emerald-green, wax-like sepals and petals, and apparently the free-flowering habit of *C. Lowianum*. The large flowers had emerald-green sepals and petals, and whitish lip marked with dark red, after the manner of the best form of *C. Lowianum*, but the lip is much larger than in that species, and bears nearer resemblance to *C. grandiflorum* in the crest. It was

said to be a founding, the seeds not coming up where they were sown, but this one, and [one or two more, presumably the same cross, came up on the moist wall of the house.

Odontoglossum × *Hallio-crispum* *Heatonense* (*Hallii* × *crispum*), from Messrs. CHARLESWORTH & Co., Heaton, Bradford.—Flower large and broad in all the segments, the large shield-shaped labellum being especially conspicuous. Sepals yellow, with red-brown blotches over the minor two-thirds, the tips yellow; petals fringed, yellow, with red-brown blotches on the inner halves; lip crimped at the edge, pale yellow, with a few reddish spots.

Cymbidium × *Lowio-Mastersianum* (*Lowianum* × *Mastersianum*).—A very interesting and pretty hybrid, whose advent merges the section honoured by botanists with the distinct generic name *Cyperorchis*, and which includes *Cyperorchis Mastersiana* and *Cymbidium* proper. The plant promises to be of elegant habit, and floriferous. The specimen, flowering for the first time, bore a raceme of four flowers, nearly as large as those of *C. x Lowio-eburneum* when first exhibited, and of similar formation. Sepals and petals white, slightly tinged with green; lip white, with purple markings.

CULTURAL COMMENDATION.

To Mr. DOWNES, gr. to J. T. BENNETT-POE, Esq., Holmewood, Cheshunt, for a well-grown Plant of *Ipsa speciosa*, with six spikes of large yellow flowers. The plant is referred to *Pachystoma senilis*, under which *Fortunei* and other yellow species are also placed in *Index Kewensis*.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq., in the Chair, and Messrs. Jos. Cheal, G. T. Miles, W. Bates, S. Mortimer, Alex. Dean, H. J. Wright, Geo. Kelf, Geo. Woodward, H. Markham, Jas. Smith, F. Q. Lane, J. Jaques, G. Reynolds, W. Wyfe, Ed. Beckett, A. Ward, J. Willard, Jas. H. Veitch, P. C. M. Veitch, A. H. Pearson, and C. G. Nix.

A dish of nice fruits of Pear *Bergamotte* *Esperen* was shown by the Earl of ILCHESTER, Holland House, Kensington (gr., Mr. Dixon), (Vote of Thanks).

Messrs. R. HARTLAND & SON, Cork, showed intensely-coloured fruits of an Apple described as *Ballinora Pippin*.

A fine bunch of forced *Asparagus* blanched to the very tip, was shown by the Duke of NORTHUMBERLAND, Syon House, Brentford (gr., Mr. Geo. Wythes), (Vote of Thanks).

Seakale from Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, Chelsea, attracted considerable attention. They showed a large quantity of the purple variety, and of *Lilywhite*, and of a new one called *Beddard's Seakale*, a cross from the purple and white varieties. It was said that the varieties were planted for forcing on Jan. 18, the varieties *Lily-White* and *Beddard's* being fit to cut in 23 days, and the purple variety five days earlier. The new one is undoubtedly a strong growing, attractive *Seakale* (Vote of Thanks).

Messrs. GEO. BUNYARD & Co., Royal Nurseries, Maidstone, were awarded a Gold Medal for a very handsome exhibit of Apples, which furnished one side of one of the long tables. The 100 dishes or so of fruits were of large size, excellent in colour, and as fresh-looking as in October. There were culinary and dessert varieties, and it is invidious to mention any when all were so good. The following varieties, however, were exceptionally attractive in appearance: *Gaseigne's Scarlet* Seedling, *King of the Pippins*, *Calville Rouge*, *Golden Noble*, *Annie Elizabeth*, *Twenty Ounce*, *Farmer's Seedling*, *Bismarck*, *Mrs. Phillimore*, *Belle Pointoise*, *Hoary Morning*, *Cox's Orange Pippin*, *Newton Wonder*, *Calville Malingre*, *Baumann's Winter Reinette*, *Winter Queening*, *Swedish Reineette*, *King of Tomkins* County, *Tower of Glamis*, *Peasgood's Nonsuch*, *Ribston Pippin*, &c. There were excellent fruits of the following Pears:—*Ramilies*, *Catillac*, and *Uvedale's St. Germain*.

Messrs. JAS. CHEAL & SONS, Lowfield Nurseries, Crawley, exhibited seventy-five baskets and dishes of Apples. We noticed very good specimens of *Cox's Orange Pippin*, *Newton Wonder*, *Jubilee*, *Beauty of Stoke*, *Paroquet* (new), *Lane's Prince Albert*, *Fearn's Pippin*, *Lord Derby*, *Mabbot's Pearmain*, and *Crawley Reinette*, a new one, said to be a very late one, in season in March, a late bloomer, and a very free cropper and easy "doer." It is a little similar to *Blenheim Orange* in appearance and size (Silver Knighting Medal).

Messrs. JOHN LAING & SONS, Forest Hill Nurseries, London, S.E., had a small collection of Apples, in which *Tom Putt*, *Gloria Mundi*, *Beauty of Kent*, *Dumelow's*

Seedling, and *Lane's Prince Albert*, showed to advantage.

Messrs. H. CANNELL & SONS, Swanley, exhibited some big Onions in several varieties.

Annual Meeting.

The annual general meeting of the Royal Horticultural Society was held at the Drill Hall, Buckingham Gate, Westminster, on Tuesday, February 11; Sir TREVOR LAWRENCE, Bart., the President, occupied the chair, and the attendance in the draughty Drill Hall was numerous.

The PRESIDENT, in opening the meeting, said:—Ladies and Gentlemen, I think we owe you some apology for the fact that we have to meet in this Hall to-day. It is not a very convenient place; but I hope that in the course of a few years we may be sufficiently fortunate to have a hall of our own.

Fifty-eight new Fellows were nominated for election at the meeting.

Mr. GEO. PAUL next moved a vote heartily thanking Sir JOHN LLEWELYN for his past services on the Council, and expressing the great regret of the Council that Sir John found it impossible, owing to the distance he lived from London, to attend the meetings of that body. Mr. Paul said they were losing a man who possessed great knowledge of horticulture, and his loss would be a very severe one to the Society.

Sir JOHN LLEWELYN, in returning thanks, assured the meeting that he left the Council with very great regret. He had always taken a pleasure in this work, which had been to him a work of love. It was a wholesome rule of the Society that members of Council should attend regularly, and this he found impossible, owing to living 200 miles from London. Of course, they did not want to make the Society a merely London Society, but they wished that its ramifications should extend far and wide. He was therefore glad to find that a countryman had been elected to fill his place. He should, however, at all times, do all he could to promote the welfare of the Royal Horticultural Society, and he was glad to see the proud position it was now holding in this country.

The PRESIDENT then said:—The next business is for me to move the adoption of the Annual report. I think there are very few people who are interested in the Royal Horticultural Society who will not agree with me, when I say that the Council are presenting a very satisfactory report to the Fellows.

NEW FELLOWS.

The numerical gains the Society has made are really remarkable. I find that 930 new Fellows were elected during the first year of the new century. That is, I say, remarkable, when I remember that in 1888—which, after all, is but a few years ago—there were only 552 paying members of the Society all told. It must not be supposed that this is in any way due to fashion. Unfortunately fashion, charming as it is, is perhaps the most fickle thing in the whole world, and if we were congratulating ourselves on the number of new Fellows to join a fashionable Society, I should not have the same satisfaction as I feel at the present moment. Nor must it be supposed that the recruiting-ground of the Society is in any way becoming exhausted; because, notwithstanding the fact that nearly 1,000 new Fellows joined the Society last year, we have already thus early in the year elected 180 new Fellows. The names of the Fellows occupy 126 closely printed pages of the Report. I have not counted them, but I am told that the total is, roughly speaking, 5500.

THE ROYAL BOTANIC.

I dare say some of you have seen in the newspapers some paragraphs associating the name of this Society with the Royal Botanic Society. We received a most courteous letter from that Society, suggesting that they should place their gardens at the disposal of this Society. Unfortunately, this Society had already made all its arrangements, not only for the present year, but I may say for practically a considerable time to come, and we were unable to meet the advances which were made to us.

THE TEMPLE SHOW.

I think you will agree with me that so long as the Benchers of the Honourable Society of the Inner Temple are so kind as to lend us their gardens, there is no better place in the City of London in which to hold our great shows. Perhaps I ought to take advantage of that remark, and say how very grateful we are to the Benchers of the Inner Temple, who have extended to us such enduring hospitality. Although the gardens are not quite as large as the Benchers might like, and certainly not so large as we could desire, still they

occupy a central position in the City of London, easily accessible from all parts, and that is a great advantage.

THE REPORT.

As to the report, I think you will agree with me that it is somewhat detailed. I do not wish to go unnecessarily into the matters dealt with; but in Paragraph 3 stress is laid on the value of the lists of awards by the various Committees of this Society. I think nobody who is occupied in the cultivation of a garden can do at all well without a copy of the lists of awards. They have been published by the Society, and we are very greatly indebted to several of our Fellows for the valuable assistance they have given us in that matter. In this connection I must mention Mr. Gurney Fowler, who has taken a great deal of trouble in making these lists correct, and I believe they have been so revised that there is scarcely a mistake to be found, if indeed there is one.

THE AWARDS.

The total awards by the various Committees during the year number 983. I venture to think that number is far too many. If the awards are multiplied with any degree of generosity, of course they lose their value in proportion to their multiplication. I think the new provision is a good one which lays it down that no award is to be given except by a vote of a two-thirds majority. Formerly the awards were decided by an absolute majority.

THE SCIENTIFIC COMMITTEE.

Then the report speaks of the value of the services of the Scientific Committee. Upon that committee are gentlemen of the highest scientific eminence in the horticultural world, and their services are very great indeed. There is no doubt whatever that the future belongs to science, and that applies to horticulture as it does to everything else. When we remember how science has absolutely altered the face of the globe, it will be seen what a prominent position is filled by the scientific horticulturist.

THE SPECIAL SOCIETIES.

It is a real satisfaction to this Society to find that several of the kindred societies, which no doubt were originally started by some members of this Society, are showing an increasing inclination to come home to roost under the auspices and guardianship of this Society. There is the Tulip Society, the Dahlia Society, the Auricula and Primula Society, and others. At this point noise was made by some workmen in the gallery, which led the President to point out the need for a Hall of their own—a remark which was again applauded. Continuing he said, these societies are now holding their shows under the auspices of the Royal Horticultural Society, and all we can say is, the more these kindred societies gather under the wings of the parent Society, the better the parent Society will be pleased.

THE AMERICAN CONFERENCE ON HYBRIDS.

With regard to paragraph 14, I should mention, in addition to Mr. Nicholson and Mr. Bateson, that we have, owing to a request coming from America, asked Captain Hurst, who is well known as a hybridiser of plants, especially Orchids, to go with those gentlemen to America for the Conference on Hybridisation to be held in New York in the autumn.

"THE JOURNAL."

There is one matter which I hope you will admit I am entitled to refer to with feelings of congratulation, and that is the *Journal*. I think there is nobody who is acquainted with the *Journal* who does not recognise the value of that publication now. Within the last year or two it has been enormously improved; and it is impossible to avoid mentioning in this connection the name of the gentleman who edits it. I refer, of course, to our invaluable Secretary, Mr. Wilks. I consider that the *Journal* for a Society of this sort has very nearly reached perfection. The cost of printing it is £1506. We have to deduct the amount we get from advertisements—£523, and from sale of copies, £88; that is a reduction of £591, leaving the net cost of producing the *Journal* £915—money, I venture to think, very well spent indeed. I must also ask you to bear in mind your obligation and gratitude to the gentlemen who are responsible for the abstracts and notes which now form a prominent feature of the *Journal*. These gentlemen occupy very prominent positions in connection with horticultural and botanical sciences, and the obligations of the Society to them are very great.

One Fellow asked whether the *Journal* could not be printed on unglazed paper; and another suggested that the edges might be cut.

The President said glazed paper was necessary for the proper production of the "blocks;" and anyone who loved books would regard the cutting of the edges as barbarous.

RECTIFICATIONS.

I should like to say in passing, that the expression "three years," in paragraph 5 of the Report, should read, "during the last five years." Then there is one rectification to make in paragraph 18 of the Report where it is stated that it is proposed to hold examinations of young men for Certificates in the month of February, instead of in April. It has been pointed out to the Council that that would be an exceedingly inconvenient time, and that it would absolutely deprive us of a considerable number of candidates, and the Council thought it best to revert to the original month of April.

ROSE CONFERENCE.

In another paragraph of the Report, you will see that, owing to the kindness of the Earl and Countess of Ilchester, a Rose Conference is to be held in the grounds of Holland House towards the end of June. I need hardly say that there could be no better place to hold such a Conference, for not only are the gardens very celebrated, but an historic interest pertains to the mansion, which would attract people to visit them, even if they did not care for the queen of flowers, the Rose. I do not think there is the slightest difficulty in entertaining the hope that the Conference which is to take place on June 24, may be continued on June 25. At one time there was considerable doubt, owing to the Coronation, but the date of that event has now been settled.

THE PROPOSED HALL.

There is only one other matter to which I ought to refer. It will be within the memory of all present that a considerable discussion has taken place as to the best way of celebrating the centenary of the Society, which will take place in 1904. It will also be within the memory of a great many present that we had a meeting in this building last year, when a proposal to purchase a site for a new garden did not, under the circumstances, recommend itself to the Fellows. At that time promises of pecuniary assistance were made to a very considerable amount by gentlemen who were present, provided the Society ultimately decided to adopt an alternative proposal for having a Horticultural Hall with offices instead of a new garden, as the best method of celebrating the centenary of the Society. Not that a hall, with offices, were to shut out the provision of a new garden when the Society has to leave Chiswick. It was felt by a great many people present that while there were always sites available for a new garden, the sites which would be suitable for a new hall would daily, and even hourly, become fewer. However that may be, it was decided by the meeting that the idea of a new garden, at all events in the manner in which it was placed before the Fellows, could not be entertained. It was largely at the instance of Baron Schröder, who has always been not only a very eminent horticulturist, but a very prominent and one of the best members of this Society, that a committee was formed to consider the sites which might be suggested for a hall for the Society. The committee consisted of Baron Schröder (as Chairman), Earl of Ilchester, Mr. Sherwood, Dr. Masters, Mr. May, Mr. Harry Veitch, and myself, with the Rev. Mr. Wilks as Secretary. Five different sites have been brought before the committee. It is not necessary, and I presume nobody would desire that I should delay this meeting by going into the details of these various sites; but during the last few weeks a site has been suggested which has been very carefully considered, and in regard to which negotiations are now going on. We were especially cautioned by the gentleman who was acting for the Society in regard to this site that we should not talk about it. Perhaps you will think that I am doing the very thing we were expressly cautioned against doing, but I am not going to mention the exact nature of the site. I believe you will trust the committee at all events not to do anything foolish, and I have the authority of every member of this Council to assure the Fellows that nothing will be done without the whole circumstances being placed fully before them, and receiving their consent. As the negotiation is now proceeding it would be not only not advantageous, but it would be absolutely disadvantageous if anything were said about it beyond what I have already stated—that the negotiation is now proceeding. As soon as it arrives at such a state that it can properly be placed before the members of this Society, the Council will summon a special general meeting and place before the Fellows the

whole of the facts. I should mention that no great delay can occur in regard to that. The matter must be settled within a reasonable time, and therefore my anticipation is that we shall be in a position to call a meeting before very long. I thought it would be wiser on the whole to make this statement rather than to say anything in reply to questions asked by the Fellows. Of course, I am well aware that the Fellows of the Society must feel very great anxiety on this subject, and if there is any question that any Fellow desires to ask, I shall be most willing to answer him if I can do so without in any way risking the success of the negotiations. I beg to thank you most sincerely for listening to my remarks. I hope you will agree that the Report is satisfactory. I should like in conclusion to say that we owe a very great debt of gratitude to everybody who has done what they possibly could to promote the interests of this Society. We owe it to the amateur and professional horticulturists of this kingdom who have done their best to maintain the Society; who have supported its shows, and put themselves to expense and personal inconvenience to promote the welfare of the Society; and we owe it to the men of science who have given us their assistance and their papers in our *Journal*. We also owe a great debt of gratitude to our Committees, which embrace most of the prominent horticulturists of the Kingdom, for their great services. Our Secretary's services to the Society are practically invaluable. He has lately been overworked, and you see how the Society has grown, and may judge what a very heavy burden of work falls upon him. We have endeavoured to relieve him of some of his work, and I am quite sure that whatever we do in that direction will receive the hearty support of the Fellows of this Society. We have a most excellent staff in our offices, and to them also our thanks are greatly due. I beg now to move the adoption of the report, and Dr. Masters will be kind enough to second the motion.

Dr. Masters said that, as a member of the Committee to which the President had alluded, he had the greatest pleasure in seconding the motion that the report be received and adopted.

CENTENARY CELEBRATION.

Mr. A. DEAN asked whether the Hall would be ready for the celebration of the Society's centenary? He also suggested that it would be a very proper way to celebrate the event by a great international horticultural exhibition for that year.

The PRESIDENT: That matter has not been overlooked. There has been considerable discussion in Council as to the desirability at some time of holding an international exhibition. But if there is one thing in the history of the Society—one caution which it conveys more than another—it is, not to be too impatient. We spent our money like water in times past. We left £80,000 at South Kensington, and what we should now do is to husband our resources with the greatest possible care, and devote them to the best means of securing an enduring prosperity for the Society, and not to run any unnecessary risks. Our hope is that when we find it possible to carry out the proposals which are being considered, the hall will certainly be ready by 1904.

The report was adopted unanimously.

THE COUNCIL.

As the provisions of the Charter require that three members of the Council shall resign every year, the Council have decided that the three vacancies shall be created by the resignation of Sir John Dillwyn Llewelyn, Bart., the Rev. Hugh A. Berners, M.A., and Harry J. Veitch, Esq. The following gentlemen have been duly nominated to fill the vacancies, viz.:—Arthur L. Wigan, Esq., Rev. Hugh A. Berners, M.A., Harry J. Veitch, Esq.

The following have been nominated for election as Vice-Presidents, viz.:—The Right Hon. Joseph Chamberlain, M.P.; the Right Hon. The Earl of Ducie; the Right Hon. Lord Rothschild; Baron Sir Henry Schroder Bart.; Sir John Dillwyn Llewelyn, Bart.; Sir Frederick Wigan, Bart.

The following have been nominated for election as officers, viz.:—Sir Trevor Lawrence, (Bart.), (V.M.), President; J. Gurney Fowler, Esq., Treasurer; Rev. W. Wilks, M.A., Secretary; Alfred C. Harper, Esq., Auditor.

The whole of these were elected without a vote being taken, as there were no other nominations.

Mr. ARTHUR SUTTON proposed: "That this meeting is glad to hear from the President that steps are being taken to secure a site for a hall, and pledges itself to

give its most favourable consideration to any proposal which the Council shall in due time lay before it." He said he was quite sure they were all indebted to the Council for work that they had been doing for many months past in trying to obtain a suitable and permanent home for the Royal Horticultural Society. He did not think that their having a hall need exclude their possessing a garden. But their experience in that building that afternoon proved to them the absolute necessity of having a home of their own.

Surgeon-Major INCE seconded the motion, which was carried with three dissentients.

The meeting then ended.

DULWICH CHRYSANTHEMUM.

FEBRUARY 4.—The eighth annual meeting of the Dulwich Chrysanthemum Society was held on the above date, and was signalled by a large attendance of the members. The balance-sheet shows a balance in hand of £10 18s. The receipts from all sources increased by £25 during the year, while the expenditure was not quite £11 more than in 1900. When it is remembered that the National Chrysanthemum Society has lost about £40 on the year's working, and many local societies have had a disappointing year, it is clear that the Dulwich Society receives a large and increasing amount of support, and great credit is due to the whole of the executive for its prosperous condition.

The Society intend to hold a three days' show instead of two days as heretofore, the dates fixed being November 11, 12, and 13.

CROYDON AND DISTRICT HORTICULTURAL.

FEBRUARY 4.—A well-attended meeting of the Croydon and District Horticultural Mutual Improvement Society was held at the "Sunflower" on the above date, Mr. W. J. SIMPSON in the chair.

Mr. A. MASLEN, gr., Bramley Hill House, read a paper on the Seasonable treatment of Vines. An interesting discussion followed.

WARGRAVE GARDENERS.

FEBRUARY 5.—The members met on the above date to hear Mr. W. J. FULLER'S 1st prize essay for assistant gardeners on "Chrysanthemum Culture." He dealt most fully with every phase of the subject, from the cutting to the exhibition stage. A long discussion took place, in which many joined. The dreaded "rust" gave rise to the expression of conflicting opinions by various gardeners.

There were some good exhibits. Six new members were elected. *H. Coleby, Hon. Sec.*

NORTH PECKHAM AMATEUR CHRYSANTHEMUM.

FEBRUARY 6.—The annual dinner of the above society took place at the Trafalgar Hotel, Peckham, on the above date, C. H. TAGG, Esq., Town Clerk of Camberwell, in the chair. He spoke highly of the horticultural Press, and in particular of the *Gardeners' Chronicle*, in the dissemination of instruction and information in regard to Chrysanthemums, as well as the support afforded to the various local authorities in London in their endeavour to provide open spaces for the "classes."

The monetary condition of the Society is very satisfactory, the balance at the bank being £35, after paying various sums to the local charities. A mutual instruction class has been started.

CHISWICK GARDENERS' MUTUAL IMPROVEMENT.

FEBRUARY 6.—At a meeting held on the above date, Mr. MILLER, of Ealing, read an interesting paper on "Plant Life," before a good attendance of members. Mr. Miller briefly traced vegetation from bacteria, viz., fungi algae, the bryophytes or liverworts, vascular cryptogams, and the phanerogams or flowering plants, and discoursed for a short time on the tissues which become more and more complex as the scale is ascended. Methods of reproduction in the various types were noted, and the phenomenon of symbiosis, as in the lichens, was discussed. The whole paper resolved itself into a brief treatise on some of the various phases of protoplasm, and as such was of immense interest, largely because so little is definitely known regarding the principles which govern its laws. *C. H. Buck, Hon. Sec.*

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

FEBRUARY 10.—At the monthly meeting held on the above date, twelve new members were elected. The death of Mr. James Clarke of Taunton was reported, and

a cheque for £61 18s. 2d. was drawn in favour of the widow, that being the amount standing to the late member's credit in the ledger. A member having received his full amount of sick pay was granted 5s. per week from the benevolent fund.

Ten members were reported on the sick fund, the amount paid out for the month being £18 2s. The Treasurer reported a balance in hand of £713 16s. 1d., and was empowered to invest £550 in the best available Trustee Stock. The annual meeting will be held at the Caledonian Hotel, Adelphi Terrace, Strand, on Monday, March 10, at 8 p.m.

NATIONAL CHRYSANTHEMUM.

FEBRUARY 10.—A meeting of the Executive Committee was held on the above date, on which occasion there was a full attendance. After an animated debate over the election of Mr. W. Mease as a judge at the October and December shows, the election was confirmed. The Secretary presented an interim financial statement, and announced that a considerable portion of the arrears of members' subscriptions had been paid. Some matters arising out of the report of the auditors were dealt with as directed by the annual meeting, and the subscriptions to the fund for establishing a memorial to the late President, Sir E. Saunders, were announced. The Secretary reported that the building [Carr's Restaurant] in which they held their meeting had been scheduled under the London County Council scheme of improvement to come down. Negotiations had been opened in several quarters in order to make provision for a future meeting-place, and with the consent of the Directors of the Royal Aquarium, Messrs. Bertram & Co. had made an offer of accommodation at the Aquarium at a nominal charge. This offer was accepted.

The date of the annual outing to Paddockhurst, Crawley, was fixed for July 23. An election to the Floral Committee was made, to fill the vacancies caused by members retiring by rotation, and most of the outgoing ones were re-elected. The Classification and Catalogue Committee, the Schedule Revision, Finance, Show, and Arbitration Committees were re-appointed with a few alterations; and a number of candidates for election were accepted.

PRESCOT HORTICULTURAL.

This is one of the more popular suburbs of Liverpool which can lay claim to a flower-show that always commands considerable attention from lovers of horticulture. In the report just issued by the Society, it is to be regretted that the year's working does not show a substantial balance, notwithstanding the fact that two social evenings have been given during the present season. However, the financial state is on the right side, and the committee, through their energetic Secretary, Mr. W. Case, have again announced an annual show, to be held, by kind permission of Lord Derby, in Knowsley Park, on July 31. *Orchid.*

HORTICULTURAL MEETING AT GHENT.

At the last meeting early in February of the *Chambre Syndicale des Horticulteurs Belges et Société Royale d'Agriculture et de Botanique*, at Ghent, the following awards were made:—Certificates of Merit: For a group of five *Odontoglossums*, from M. TH. PAUWELS; for *Cypripedium* *hyb. villosum* × *Leeanum*, from M. FL. STEPMAN, of Brussels; for *C. Hoogendyckeanum* *Leeanum* × *villosum*, for C. Vanden Bulcke *sup. x insigne coloratum*, both from M. STEPMAN; and for *Miltoniopsis Bleuana* and *Laelia anceps* var. *Hollidayana*, both from M. E. PRAET.

A Certificate of Flowering was allotted for *Lycaste Skinneri* var., from M. TH. PAUWELS.

The following awards were also made:—For *Cypripedium Spicerianum* × *insigne sylhetense*, from M. PYNNAERT VAN GEERT; *Ficus radicans* variegata, from M. LOUIS DE SNET; *Cypripedium* *hyb. Spicerianum* × *sylhetense*, and *C. Spic. x sylhetense*, both from M. L. DRAPS-DOM, of Brussels; and for cut flowers of *Cypripedium*, from MM. JANSSENS and PUTZEYS, of Merxem, Antwerp.

A Certificate of Flowering was awarded for *Cymbidium Hookerianum*, from M. L. DE SNET DUVIVIER.

Honourable Mention was accorded for: *Cypripedium* *hyb. Boxalli x barbatum*, from M. PYNNAERT VAN GEERT; for C. *Godseffianum*, from the same exhibitor; for *C. Spicerianum* × *barbatum purpuratum*, from M. L. DRAPS-DOM; and for *C. hirsutissimum* × *barbatum illustre*, from the same exhibitor.

SCILLY ISLES NARCISSUS.—The largest consignment—14 tons—of Narcissus grown this season in the Scilly Isles arrived at Penzance yesterday for the English market. *Westminster Gazette, February 12, 1902.*

SEASONABLE NOTES ON CHRYSANTHEMUMS.

PLANTS raised from cuttings put in during the month of December under frames, hand-glasses, &c., and properly attended to, are making good progress. When it is seen that growth is taking place, gradually expose them by admitting air, and a few days later the plants may be placed upon a shelf suspended from the rafters in the same house. When the young plants have moderately filled the pots with roots, they must be at once removed to others 3½ ins. in diameter. They will subsequently be removed into pots 5½ ins. in diameter, and later into the pots in which they will flower.

For the present potting use a compost of two parts loam, one of leaf-mould or half-decayed horse-manure, with sand added. To every bushel of such compost add 1 lb. of Thomson's Vine and Plant Manure, or other good plant stimulant. Many fail in cultivating Chrysanthemums because they start their plants too weakly. The plants cannot be grown too strongly at this period.

For the greater convenience in potting, pass the compost through a coarse sieve, rubbing the fibrous parts through also, not rejecting this. Use clean pots, and provide them with good drainage material, which should be protected by a covering with some of the rougher parts of the compost. Pot firmly. Let the soil be moist at the time it is used, and do not afford water for a day or two at least. During the early months of the year young Chrysanthemum plants may be severely checked by over-watering, and every care should be taken to avoid this, remembering also that the leaves should never be permitted to flag from lack of moisture.

After potting, return the plants to their former position on the shelf, until the roots run through the soil to the sides of the pots; then place a neat stake to each, and transfer them to a cold frame or pit, standing them upon ashes near to the glass. Keep the atmosphere of the frame rather close for a day or two, after which admit air as abundantly as the state of the weather will permit, and on very fine days remove the lights altogether during the warmest hours. A sufficient covering should be provided over the glass at night to protect the plants from frost. A Chrysanthemum plant should never be allowed to suffer a check of any kind, from the time the cutting is inserted until the blooms are developed. *E. Molyneux.*

MARKETS.

COVENT GARDEN, FEBRUARY 13.

(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 revise the list, and 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 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.)

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

| | s.d. | s.d. | | s.d. | s.d. |
|---|------|--------|---------------------------------|------|--------|
| Asparagus 'Fern,' bunch... | 1 | 6-2 6 | Lily of Valley, p. doz. bunches | 9 | 0-18 0 |
| Carnations, per dozen blooms | 1 | 0-2 0 | Maidenhair Fern, doz. bunches | 4 | 0-8 0 |
| Cattleyas, p. doz. | 9 | 0-12 0 | Mignonette, per doz. bunches | 4 | 0-6 0 |
| Eucharis, p. doz. | 4 | 0-6 0 | Odontoglossums, per dozen | 2 | 6-6 0 |
| Gardenias, doz. | 1 | 6-2 0 | Roses, Teal, white, per dozen | 1 | 0-3 0 |
| Lilium Harrisii, dozen blooms | 5 | 0-8 0 | — Catherine Mermet, per doz. | 2 | 0-5 0 |
| Lilium lancifolium, album, p. doz. blooms | 3 | 0-4 0 | Smilax, p. bunch | 3 | 0-5 0 |
| Lilium rubrum, per dozen | 3 | 0-5 0 | Tuberose, per doz. blooms | 0 | 4-0 6 |
| Lilium longidorm. per dozen | 5 | 0-8 0 | | | |

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s.d. | s.d. | | s.d. | s.d. |
|--------------------|-----------|------|---------------------|-----------|----------|
| Adiantums, doz. | 5 0-7 0 | | Ferns, small, per | 100 | 4 0-6 0 |
| Arbor-vitæ, var., | | | Ficus elastica, ea. | 1 6-7 6 | |
| per dozen | 8 0-36 0 | | Foliage plants, | | |
| Aspidistras, doz. | 18 0-36 0 | | various, each | 1 0-5 0 | |
| — specimen, ea. | 5 0-10 6 | | Lily of Valley, ea. | 1 9-3 0 | |
| Cannas, per doz. | 18 0 | | Lycopodiums, p | dozen | 3 0-4 0 |
| Crotons, per doz. | 18 0-30 0 | | Marguerites, per | dozen | 8 0-12 0 |
| Cyclamen, p. doz. | 8 0-10 0 | | Myrtles, per doz. | 6 0-9 0 | |
| Dracenas, var., | | | Palms, var., each | 1 0-15 0 | |
| per dozen | 12 0-30 0 | | — specimen, ea. | 21 0-63 0 | |
| — viridis, doz. | 9 0-18 0 | | Pelargoniums, | | |
| Ericas, var., doz. | 12 0-36 0 | | scarlet, doz. | 8 0-12 0 | |
| Euonymus, var., | | | — ivyleaf, per | dozen | 8 0-10 0 |
| per dozen | 8 0-18 0 | | Spiræas, per doz. | 6 0-12 0 | |
| Evergreens, var., | | | | | |
| per dozen | 4 0-18 0 | | | | |
| Ferns, in variety, | | | | | |
| per dozen | 4 0-18 0 | | | | |

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s.d. | s.d. | | s.d. | s.d. |
|--------------------|-----------|------|--------------------|-----------|------|
| Apples, home- | | | Custard - Apples, | | |
| grown, Wel- | | | per dozen | 6 0-10 0 | |
| lington, per | | | Grapes, Gros Col- | | |
| bushel... | 6 0-10 0 | | mar, A. p. lb. | 2 6-3 0 | |
| — Californian, | | | — B., per lb. | 1 6-1 9 | |
| cases | 8 0-10 0 | | — Alicante, lb. | 1 3-2 0 | |
| — Blenheim's, | | | — Almeida, per | | |
| &c., p. bushel | 5 0-8 0 | | 12 lb. ... | 5 0-6 0 | |
| — Nova Scotian, | | | — per barrel | 14 0-15 6 | |
| various, p. bbl. | 21 0-26 0 | | Lemons, per case | 5 6-10 6 | |
| — King Pippins, | | | Oranges, Denia, | | |
| per bushel | 5 0-7 0 | | per case | 10 0-13 0 | |
| — Large Cookers, | | | — Jaffa, per case | 13 0-17 0 | |
| per bushel | 13 0- | | — Jamaica, per | | |
| Bananas, bunch | 6 0-10 0 | | case | 12 8 - | |
| — loose, p. doz. | 1 0-1 8 | | — Navel, per | | |
| Cape Fruits— | | | case | 13 0-14 0 | |
| Apricots, cases | 6 0-10 0 | | — Tangierine, | | |
| Peaches ... | 10 0-13 0 | | per case | 0 10-8 6 | |
| Plums ... | 5 0-8 0 | | Pears, Easter | | |
| Chestnuts, per bag | 7 0-14 0 | | Beurré, in half | | |
| Cobnuts, Kentish, | | | cases | 8 0-9 0 | |
| per lb. | 0 11-1 0 | | Pines, each | 1 9-3 3 | |
| Cranberries, case | 8 0-10 6 | | Sapucaia Nuts, lb. | 1 3 - | |
| — quart ... | 0 8 - | | Walnuts, per bag | 3 0-4 0 | |

VEGETABLES.—AVERAGE WHOLESALE PRICES.

| | s.d. | s.d. | | s.d. | s.d. |
|---------------------|-----------|------|--------------------|-----------|------|
| Artichokes, Globe, | | | Mushrooms, house, | | |
| per dozen | 3 0-3 6 | | per lb. | 0 6-0 9 | |
| — Jerusalem, p. | | | Onions, case | 8 0-8 6 | |
| sieve | 1 0-1 6 | | — English, per | | |
| Asparagus Sprue, | | | cwt. ... | 7 0-7 8 | |
| bundle | 1 0 - | | — in bags | 5 8-8 0 | |
| — English | 9 0-10 0 | | — picklers, per | | |
| — Paris Green | 7 0 - | | sieve | 2 0-3 0 | |
| — Spanish | 2 9 - | | Parsley, per doz. | | |
| Barbè de Capucine, | | | bunches | 1 6-2 0 | |
| bundle | 0 3 - | | — sieve | 4 0 - | |
| Beans, dwf., house, | | | Parsnips, p. cwt. | | |
| per lb. | 2 6-3 0 | | bag | 2 6-3 3 | |
| — Madeira, per | | | Potatoes, per ton | 50 0-90 0 | |
| basket | 2 6-3 0 | | — new, per lb. | 0 33-0 4 | |
| Beetroots, per | | | — Frame, lb. | 0 8 - | |
| bushel | 1 3-1 8 | | — new Teneriffe, | | |
| Brussels Sprouts, | | | per cwt. | 10 0-14 0 | |
| sieve | 2 0-2 6 | | Radishes, p. doz. | | |
| Cabbage, tally | 5 0 - | | bunches | 1 0-1 6 | |
| — dozen | 0 9-1 0 | | Rhubarb, Yorks, | | |
| Carrots, per doz. | | | per dozen | 1 2-1 4 | |
| bunches | 3 0-3 6 | | Salad, small, pun- | | |
| — washed, bags | 2 6-3 6 | | nets, per doz. | 1 3 - | |
| — unwashed, per | | | Salsafy, per doz. | | |
| bag | 2 0 - | | bundles | 7 0 - | |
| Cauliflowers, doz. | 3 0 - | | Savoy, tally | 3 0-8 0 | |
| — tally | 5 0-10 0 | | Seakale, per doz. | | |
| Celeriac, per doz. | 2 6 - | | punts | 11 0-13 0 | |
| Celery, 12 bundles | 10 0-16 0 | | Shallots, per lb. | 0 2 - | |
| Chicory, per lb. | 0 3 - | | Spinach, English, | | |
| Cress, per dozen | | | bushel | 4 0 - | |
| punnets | 1 3 - | | Stachys, lb. | 0 4 - | |
| Cucumbers, doz. | 6 0-12 0 | | Tomatoes, Canary, | | |
| Endive, new | | | boxes | 3 6-4 6 | |
| French, doz. | 2 0-2 8 | | Turnip-Tops, per | | |
| Garlic, per lb. | 0 3 - | | bushel | 2 0 - | |
| Horseradish, fo- | | | — bag | 1 6-2 0 | |
| reign, bunch | 1 0-1 8 | | Turnips, per doz. | | |
| Leeks, 12 bunches | 2 0 - | | bunches | 2 6-3 0 | |
| Lettuces, Cabbage, | | | — bag | 1 6-2 6 | |
| per dozen | 0 10-1 3 | | Watercress, per | | |
| Mint, new bunch | 0 4-0 6 | | doz. bunches | 0 8-0 8 | |

FRUITS AND VEGETABLES.

GLASGOW, February 12.—The following are the averages of the prices during the past week:—Apples, Newtown Californian, 8s. 6d. to 10s. 6d. per case; Oregon, 12s. to 13s. 6d.; Nova Scotia Baldwins, 22s. to 24s. per barrel; Maine, 20s. to 24s. do.; Canadian, 23s. to 26s. do.; Grapes, 1s. to 2s. 6d. per lb.; Oranges, Valencias, ordinary, 420s. 7s. to 8s. per box; do., large 420s. 9s. 6d. to 10s. do.; extra large do., 8s. 6d. to 12s. 6d. do.; large 714s. 9s. to 9s. 6d. do.; Jaffa, 12s. to 13s. do.; Mushrooms, 1s. to 1s. 3d. per lb.; Onions, Valencias, 5s. 9s. 6d. to 10s. per box; do., Globe 8s. 6d. do.; do. Dutch 6s. 6d. do.

LIVERPOOL: February 12.—Wholesale Vegetable Market.

—Potatoes, per cwt.: Up-to-Date, 2s. 3d. to 3s. 3d.; Main Crop, 3s. 3d. to 4s. 3d.; Lyon Grays, 2s. to 2s. 6d.; Bruce, 2s. 3d. to 3s. 3d.; Turnips, 10d. to 1s. 2d. per 12 bunches; Swedes, 1s. 6d. to 1s. 9d. per cwt.; Carrots, 3s. 6d. to 4s. do.; Onions, foreign, 5s. 6d. to 6s. 6d. per cwt.; Parsley, 10d. to 1s. 2d. per dozen bunches; Cauliflowers, 1s. to 2s. 6d. per dozen; Cabbages, 10d. to 2s. per dozen; Celery, 8d. to 1s. 6d. do. St. Johns: Potatoes, 1s. per peck; Cucumbers, 1s. each; Grapes, English, 1s. 6d.

to 2s. 6d. per lb.; do., foreign, 6d. to 8d. do.; Pines, foreign, 3s. 6d. to 6s. each; Mushrooms, 1s. per lb.; Filberts, 1s. do. Birkenhead: Potatoes, 1s. to 1s. 2d. per peck; Grapes, English, 1s. 6d. to 3s. 6d. per lb.; do., foreign, 4d. to 8d. do.; Mushrooms, 1s. to 1s. 6d. per lb.

SEEDS.

LONDON: February 12.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report to-day's market thinly attended, with a quiet business passing. The article which still meets with most favour is Alsike, and a further advance therein has to be noted. With regard to White Clover-seed, although the excitement has spent itself, no lower prices are accepted, and its firmness appears fully justified by its real scarcity. Red Clover-seed, meantime, keeps dull, and favours buyers; but full rates are demanded for Trefoil, Timothy, and Cocksfoot. Linseed has risen 1s. per quarter; but Mustard is cheaper. There is, however, no change in Rape-seed. Tares are in active request, on fully former terms. Bird-seeds move just now in narrow limits. The severe weather naturally increases the consumption of Blue Peas and Haricot Beans. The Board of Trade returns give the imports into the United Kingdom of Clover and grass-seeds for the past month as 43,709 cwt., value £319,131; as against 37,701 cwt., value £244,603, for January, 1901.

CORN.

AVERAGE PRICES OF British Corn (per Imperial qr.), for the week ending February 8, 1902, and for the corresponding period of 1901, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

| Description. | 1901. | 1902. | Difference. |
|--------------|-------|-------|-------------|
| | s. d. | s. d. | s. d. |
| Wheat ... | 28 8 | 27 2 | + 0 6 |
| Barley ... | 25 7 | 26 9 | + 1 2 |
| Oats ... | 17 7 | 20 3 | + 2 8 |



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period February 2 to February 8, 1902. Height above sea-level 24 feet.

| 1902. | | DIRECTION OF WIND. | TEMPERATURE OF THE AIR. | | | | RAINFALL. | TEMPERATURE OF THE SOIL at 9 A.M. | | | |
|---------------------------------|-----------|--------------------|-------------------------|--------|-----------------|-----------------|-----------|-----------------------------------|------------------------------|-----------|--|
| FEBRUARY 2 TO FEBRUARY 8. | At 9 A.M. | | Day. | Night. | At 1-foot deep. | At 2-feet deep. | | At 4-feet deep. | LOWEST TEMPERATURE ON GRASS. | | |
| | Dry Bulb. | | | | | | | | | Wet Bulb. | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| SUN. 2 | E.N.E. | deg. | deg. | deg. | deg. | ins. | deg. | deg. | deg. | deg. | |
| MON. 3 | E.N.E. | 32.7 | 32.0 | 35.5 | 32.0 | 0.06 | 35.5 | 39.7 | 43.9 | 29.3 | |
| TUES. 4 | N.E. | 35.3 | 34.0 | 35.8 | 32.5 | ... | 35.5 | 39.5 | 43.6 | 31.5 | |
| WED. 5 | E.N.E. | 33.0 | 32.0 | 36.2 | 32.5 | ... | 35.7 | 39.3 | 43.5 | 30.0 | |
| THU. 6 | E.N.E. | 34.8 | 33.2 | 38.6 | 33.0 | ... | 35.9 | 39.2 | 43.3 | 31.0 | |
| FRI. 7 | N.E. | 32.0 | 30.5 | 39.1 | 31.6 | 0.03 | 36.4 | 39.3 | 43.1 | 27.5 | |
| SAT. 8 | S.E. | 34.5 | 33.9 | 27.3 | 30.5 | 0.05 | 36.1 | 39.3 | 43.0 | 23.1 | |
| MEANS | ... | 33.5 | 32.4 | 36.8 | 31.9 | 0.15 | 35.8 | 39.5 | 43.5 | 28.1 | |

Remarks.—Dull, cold weather has prevailed during the past week, with strong wind, slight rains, and snow at intervals.

GENERAL OBSERVATIONS.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending Feb. 8, is furnished from the Meteorological Office:—

The weather was fair in most parts of the Kingdom during the earlier half of the week, but subsequently became less settled, until by Saturday snow had become very general in all the northern districts, and sleet or cold rain in the south. The snowfall in some of the

northern districts of Great Britain and Ireland was very heavy.

The temperature was again below the mean, the deficit ranging from 3° in England, N.E., and 4° in Ireland, N., to 6° in the Midland Counties, England, S., the Channel Islands, and Scotland, N., and to 7° in England, S.W. The highest of the maxima were recorded on rather irregular dates. They varied from 48° in England, S.W. and the Channel Islands, to 42° in England, N.E. and N.W. At many northern, central, and eastern stations the daily maxima were frequently below 36°. The lowest of the minima were registered either at the beginning or end of the period. They varied from 8° in Scotland, E. and 10° in Scotland, N. (at Nairn and Wick on Sunday), to 20° in England, S.W., 28° in Ireland, S., and 31° in the Channel Islands.

The rainfall was less than the mean in all districts. Some of the amounts yielded by the snow were large—especially in the north of Ireland. At Edeniel there was as much as 0.92 inch, and at Armagh 1.02 inch.

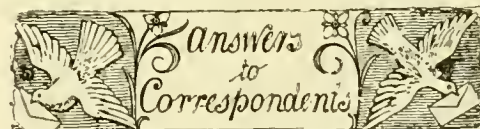
The bright sunshine was much less than the normal over the Kingdom as a whole, but exceeded it in Scotland, N., and Ireland, S. The percentage of the possible duration ranged from 24 in the latter district, and 23 in the former, to 9 in England, S. and N.W., and in Ireland, N., and to 6 in England, E.

THE WEATHER IN WEST HERTS.

The present cold spell has now lasted exactly a fortnight, during which the temperature in the screen has at no time risen more than 8° above the freezing point. On the coldest night of the past week a thermometer exposed on the surface of the snow registered 18° of frost. The ground has been gradually getting colder, and is now 3° colder at 2 feet deep, and 4° colder at 1 foot deep, than is seasonable. Snow fell on the morning of the 8th to the mean depth of an inch, and the ground is still about half covered by this fall. No measurable quantity of water has as yet come through either of the percolation gauges this month. The sun shone on an average for one and a half hours a day during the week, which is a small record for February. The air has been throughout very calm, the mean rate of movement at 30 feet above the ground being only one and a half miles an hour. The atmosphere has again proved dry for the time of year. E. M., Berkhamstead, February 11, 1902.

TRADE NOTICE.

MR. F. SANDER, of St. Albans, and of Bruges, Belgium, requests us to make known that he has taken into partnership his three sons, Conrad Fearnley Sander, Frederick Kropp Sander, and Lewis Lohmann Sander, who have been engaged in the business for several years. The style of the firm will henceforth be Sander and Sons. Mr. Godseff remains as manager.



APPLE SHOOT BORED: W. Noble. The work of the Wood Leopard moth-caterpillar, *Zeuzera aesculi*. When coarse wood-dust is noticed at the foot of a tree or beneath the branches, suspect this creature as the originator, and look for the entrance to the gallery, up which thrust a wire and kill the caterpillar.

BOOKS: F. W. C. The most modern and the best for your purpose is *The Book of the Rose*, by the Rev. A. Foster-Melliar, published by Messrs. Macmillan & Co., St. Martin's Street, London, W.C. The publications of the National Rose Society can be obtained from Mr. E. Mawley, Rosebank, Great Berkhamstead.

CYCLAMEN: N. Y. Z. The production of two flower-stalks where one only normally occurs is not a very rare occurrence. In your case the two flower-stalks are fused together. On making a cross-cut, the vascular bundles are found arranged, not in a circle, but in an ellipse. The stalks are united all the way up, but the flowers themselves are not joined.

DISTANCE OF EARTH FROM THE SUN: B. G. S. The earth's path or orbit is not strictly

circular, but an ellipse in one of the foci of which is the sun. The earth is nearest the sun or in perihelion at the beginning of the year, or when it is winter in the northern hemisphere; and at its greatest distance, aphelion, at midsummer in that hemisphere. The least distance of the sun from the earth is 94,000,000, and the greatest 96,000,000 of miles.

EVERLASTING PEAS: *W. G. L.* The roots and tops of these reaching to considerable length, the plants in nursery lines should certainly not be planted at a less distance apart than 2 feet. If they are grown in 8 to 10-inch pots sunk in the soil, and that, perhaps, is the better way, 15 inches would afford enough space for top growth to develop.

FOREIGN BASKET-MAKERS: *G. Bradwell.* We are unable to recommend traders. You should consult *Letts' London Directory*, under Foreign.

GARDENER IN ILL-HEALTH: *Bouvard.* See reply to a similar question in our "Enquiry" column last week.

HARDY RED, WHITE, AND BLUE COLOURED PLANTS FOR A DEVICE: *Inquirer.* Red: *Ajuga reptans*; white: *Centaurea ragusina*, *Cineraria maritima*, or *Cerastium tomentosum*; blue: *Plumbago Larpetæ*. Much depends upon the season of the year for which the design is intended.

HYACINTHS FAILING: *G. F.* The bulbs may have been lifted in an immature condition, and are unfitted for forcing, although capable of producing flowers at their natural season. Many such instances of the slow-rooting of Hyacinths and Tulips have reached us this season.

LACK OF NOTICE: *E. R.* We think that you were there on trial. It would be unwise to take the matter into a Court.

LAPAGERIA: *Bouvard.* Loam of a rough, turfy kind, two-thirds; peat, one-third; and enough sharp sand as will make the soil porous.

LILY OF THE VALLEY: *Ignoramus.* So long as the plant is at rest it may be planted; and if you can determine those parts of the plant, i.e., buds, or, in garden parlance, crowns, which are three years old, and plant only these, you may get flowers next June as desired. That is the chief point, as crowns older than three years have already flowered, and will not again flower; and those of one and two years are too young for flowering. Three-year-old crowns are obtainable from the Lily of the Valley specialists. See our advertisement columns.

MONOGRAPH OF THE COCCIDÆ OF THE BRITISH ISLES: *A. L.* As was stated in last week's *Gardeners' Chronicle*, it is a publication of the Ray Society, and only obtainable by the members of that society.

NAMES OF FRUITS: *Novice.* 1, Winter Majetin; 2, Minchull Crab; 3, Ribston Pearmain.—*G. C.* 1, Besi Vact; 2, Due de Nemours; 3, Moccas; 4, Notaire Minot.—*B. B.* Irish Reinette.—*F. W.* 1, Jean de Witte; 2, L'Inconnue; 3, Leopold I.—*P. M., Malpas.* 1, Easter Bourré; 2, Glout Moreau; 3, Bourré Sterekmans.—*J. J.* Cassante de Mars.—*C. G. M.* 1, Winter Quoining; 2, Gascoyne's Scarlet Seedling; 3, Royal Russet; 4, Rosemary Russet; 5, Fearn's Pippin; 6, Cockle's Pippin.—*M. A. R.* The Apple is Red Ingestre, one of Knight's seedlings, which originated from the same cross as Yellow Ingestre, and the seed was obtained from the same fruit as the latter variety, which is however much more generally known.—*G. O. R.* The Apples are as follows: green, Winter Greening; bronze, not recognisable, a very poor specimen; red streak, Keeping Red Streak, it is not much grown now, but it was at one time in the Royal Horticultural Society's collection; russet, Pitmaston Nonpareil; lemon, Golden Spire.

NAMES OF PLANTS: *S.* The seed-pods of *Colutea arborescens* (Bladder Senna).—*F. Felix.* *Sericographis* (Jacobinia) *Ghiesbrechtiana*.—*W. C. & Sons.* 1, *Gesnera splendens*; 2, *Billbergia nutans*, figured in the *Botanical Magazine*, t. 6423.—*J. P.* *Ansellia gigantea lutea*.—*W. P. J.* *Dendrobium speciosum*, growing well in a sunny conservatory.—*Crassinode.* The Orchid seems to be *Sophranitis cernua*. It will grow on rafts or blocks suspended in a moderately cool house, and kept moist.—*W. P.* *Areostaphylos Uva-ursi*.—*J. B.* Probably a species of *Panax*, but we cannot be sure from the specimens sent.

PASSIFLORA: *Heliotrope.* The disfigurement upon the leaves may be due to drippings of cold water upon them. It is likely the flowers will set better when the days are a little longer, and warmer.

PEACH SHOOTS DEAD: *W. J. P.* There is nothing observable about the shoots sent to indicate the probable cause of their death. The shoots seem of fair strength, and they are well set with flower and wood-buds. We should attribute the loss to something applied to the soil or to the tree as a wash, or to the grubs of *Scolytus Pruni* or *S. rugulosus*, whose footless larvæ make perpendicular galleries or tunnels between bark and wood, from which in all directions smaller galleries branch out. You should examine the older wood and stem for traces of the borings. There are several other species of borers affecting the Peach. The soil sent appears to be of good quality, and quite suitable for the Peach.

PEACHES AND VINES: *Bouvard.* At the strength of 2 to 3 oz. of Gishurst Soap to the gallon of warm water; no harm will be done whilst the buds remain closed.

RAISER OF THE POTATO SIR JOHN LLEWELYN: *Solanum.* Probably the exhibitor, Mr. J. Harris, Blackpill Nurseries, Swansea. Why do you not write to them for information regarding the novelty?

STREPTOCARPUS: *Bouvard.* Petroleum; a wine-glassful in a gallon of soap-suds, keeping the same well agitated whilst being used. Dipping head downwards in a vessel containing the insecticide is better than syringing the plants. It must be repeated till the mealy bugs are destroyed.

SWEET WILLIAMS INJURED: *T. H. C.* The injury is caused by weevils, for which pay a visit to the plants after dark, providing yourself with a dark-lantern, and having turned on the light suddenly, the creatures will be observed to scamper away in all directions, when you must catch them.

THE NURSERYMEN, MARKET GARDENERS', AND GENERAL HAILSTORM INSURANCE CORPORATION, LTD.: *G. Bradwell.* The above is the full title of the Co., and its offices are at 41 and 42, King Street, Covent Garden, London, W.C.

TOMATOS: *J. W. N.* The young plants are attacked by some fungus, and you cannot do better than use sulphide of potassium (liver of sulphur), at the rate of $\frac{1}{2}$ oz. to one gallon of water; or continue the use of the Bordeaux Mixture or the Wye Mixture, which you have been using hitherto. The early winter-raising of Tomato plants on such an enormous scale is sure sooner or later to lead to a catastrophe, seeing that the conditions of cultivation weaken the plants, rendering them extremely liable to infection. The plant which had been syringed with the Wye Mixture showed the fungus killed or greatly checked. Both plants had evidently been raised in a warm, steamy house, with but little ventilation afforded, as would be the case at this season. We should question the advisability of sowing Tomato-seed at so early a date.

WISTARIAS: *D. K.* The white-flowered *W. chinensis macrobotrys*, and *W. japonica*, also white, are of equal hardness.

COMMUNICATIONS RECEIVED.—Jemima Greenwood.—Dr. Grosser, Breslau.—A. W.—C. W. D.—H. H. H.—R. P. L.—T. H. L.—C. D.—S. K.—C. P.—W. E. B.—H. R. H.—Rusticus—E. B., with thanks, letter to follow.—J. P.—R. T.—H. F.—J. McL.—G. S.—"The Agricultural Assistant," Cape of Good Hope.—G. T. G., Paris.—A. D. W.—Prof. Dehérain, Paris.—C. Sprenger, Naples.—A. W., Isleworth.—A. H.—C. S.—F. M.—J. H. H.—S. W. F.—T. H. S.—R. H.—F. W. B.—W. A. C.—Rev. H. F.—E. C.—J. O'B.—T. H. L.—M. W.—W. H. C.—C. L. B.—H. Woodthorpe.—W. J. C.—H. S.

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.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

CATALOGUES RECEIVED.

GARDEN SEEDS.

DOBIE & MASON, 22, Oak Street, Manchester.
JOHN CHARLTON, 35 & 37, The Pantiles, Tunbridge Wells
HOGG & ROBERTSON, 22, Mary Street, Dundee.
C. R. SHILLING, Hartley Seed Stores, Winchfield, Hants.
F. C. EDWARDS, 12-15, Warehouse Hill, Leeds.
BROWN & WILSON, 10, Market Place, Manchester.
THOMAS CRIPPS & SON, 49, High Street, Tunbridge Wells, Kent.

ARTHUR ROBINSON, 1A, Bishopsgate Without, City.
MILLAR BROTHERS, 20, Market Place, Hull.
GEORGE BRUCE & CO., 35, Market Street, Aberdeen.
Also Farm Seeds.

KELWAY & SONS, Langport, Somersetshire. Also General Plant and Root Catalogue.

CO-OPERATIVE SEED CO., Albany Road, Roath, Cardiff.
Also Farm Seeds.

FARM SEEDS.

E. WEBB & SONS, Wordsley, Stourbridge.
DICKSON, BROWN & TAIT, 43 & 45, Corporation Street Manchester.
TOOGOOD & SONS, Southampton.

ORCHIDS.

CHARLESWORTH & CO., Heaton, Bradford.

FOREIGN.

J. LAMBERT & SÖHNE, Trier—Seeds and Plants.
VALLERAND FRÈRES, Seine-et-Oise.
MM. DENAÏFFE ET FILS, Carignan, Ardennes, France—Seeds.
W. ATLEE, BURPEE & CO., Philadelphia, Pa.—Seeds.
H. CORREYON, Jardin d'Acclimatation, Geneva—Seeds.
RIVOIRE, PERE ET FILS, 16, Rue d'Algerie, Lyons, France—Plants; special offer to the trade.
WILHELM PFITZER, Militärstrasse 74, Stuttgart—Seeds and Plants.

MANURES.

THE NATIVE GUANO COMPANY, LTD., 29, New Bridge Street, Blackfriars, London, E.C.

MISCELLANEOUS.

JOHN HEPWORTH & Co. (successors to W. F. CHARLES & Co.), Loughborough, Leicestershire—Insecticides, Vaporisers, Weed Killer, Manures, &c.

GARDENING APPOINTMENTS.

Mr. F. FOLWELL, for the past four and a half years Foreman in the gardens at Foxbury, Chislehurst, as Gardener to CHAS. MORLEY, Esq., M.P., Shockerwick House, Bath; entered upon his duties, February 10.

Mr. GEORGE FORD CHISLETT, for two years and a half Head Gardener at The Manor House, Ringwood, Hants, as Head Gardener to H. EMMONS, Esq., at his new place, Hamble, Southampton.

Mr. JOSEPH SANGSTER, for the last four years Steward and Gardener at Burton Hall, Stillorgan, County Dublin, as Head Gardener and Steward to CHAS. R. HAMILTON, Esq., of Hamwood, Dunboyne, Co. Meath.

Mr. CHAS. BRENNAN, lately Foreman in the Gardens, Kenure Park, Rush, Co. Dublin, as Head Gardener to GEO. F. BROOKE, Esq., D.L., Summertown, Castleknock, Co. Dublin.

Mr. R. Towse, late of Gisburn Park Gardens, Clitheroe, as Gardener to Mrs. Thwaites, Troy, Blackburn.



CALOCHORTUS PLUMMERAE (HORT. WALLACE): COLOUR LILAC.

CALOCHORTUS.

THERE are few if any, flowers that surpass in beauty those of this genus; and there are few, if any, botanists more capable of dealing with them in a satisfactory way than Mr. CARL PURDY. That gentleman has lately issued a revision of the genus *Calochortus* in the *Proceedings of the California Academy of Sciences*. The plants extend from British North-west America to

Mexico, and as far east as Nebraska. This vast area entails considerable variation in soil, climate, and altitude; and a corresponding variation in the plants which grow in it.

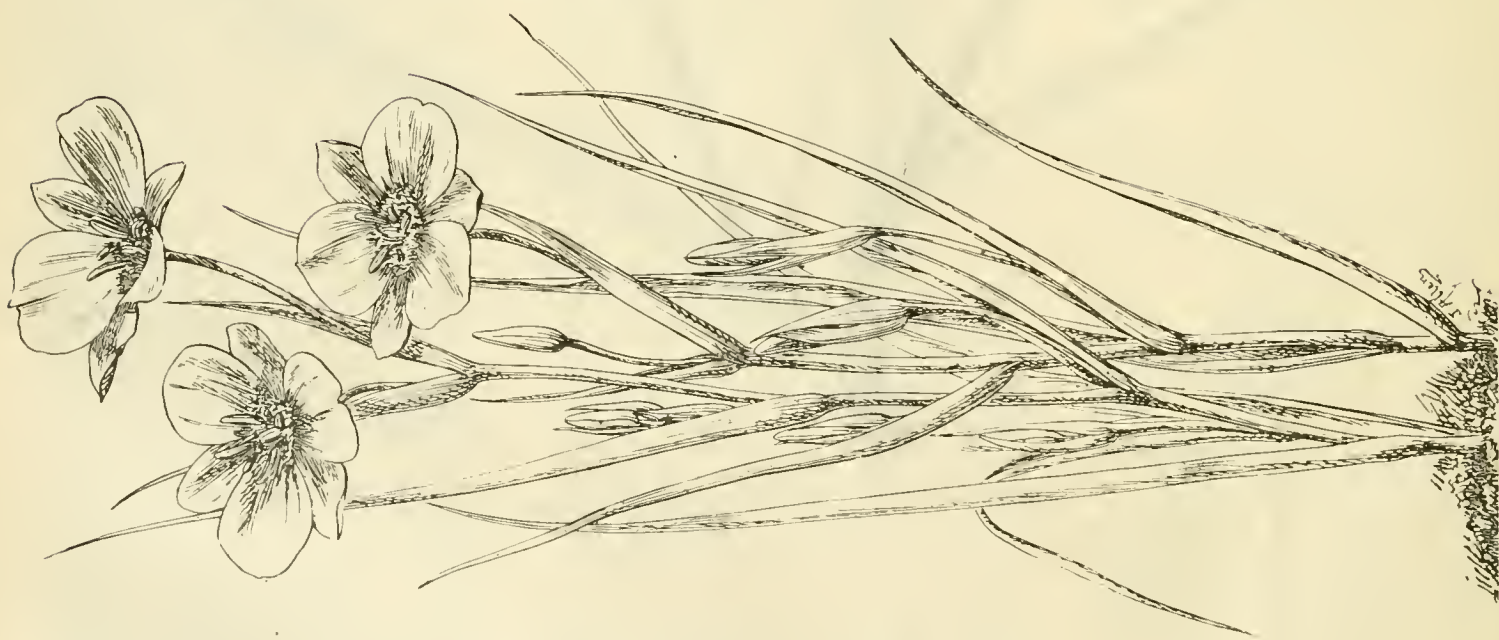
It is only in the garden, writes Mr. PURDY, where plants from different localities can be grown under identical conditions, that the relationship between apparently different forms can be satisfactorily determined. Mr. PURDY has had nearly every

known species under cultivation for some years, and the garden has proved the identity of forms apparently different; here also the variations attributed to environment are shown to be constant. In the garden, too, strains which from a botanist's standpoint seem scarcely distinguishable, showed marked differences in vigour, flowering time, or immunity from disease.

Hundreds and thousands of Liliaceous



CALOCHORTUS LEICHTLINI: COLOUR OF FLOWERS
WHITE WITH PURPLE SPOT.



CALOCHORTUS MADRENSIS (A NORTH MEXICAN SPECIES):
COLOUR OF PETALS ORANGE-YELLOW.



CALOCHORTUS PURDYI: COLOUR OF FLOWERS SILVERY-WHITE WITH PURPLISH HAZE.



CALOCHORTUS LUTEUS VAR. WEEDI: FLOWERS RICH YELLOW.



CALOCHORTUS ELEGANS VAR. ANGENA: COLOUR OF FLOWERS LILAC.

plants may in one locality be picked showing little or no variation. In another locality the variation is very observable. The difference may be slight, but the "variant" once noted is found to be constant. The difference is generally such as that which florists denote by the term strain, not that which constitutes a species or variety. Mr. PURDY tells us he has seen places where hundreds of flowers of *C. venustus* could have been selected, each differing in colour and markings from the rest. Why a species that remains so true to a type in some localities should vary so remarkably in others, is a circumstance not easy of explanation. Hybridisation will account for it in some but not in all instances.

In cultivation, a very slight variability in strain is often accompanied by a marked

constitutional difference. In two adjacent beds of *Calochortus venustus* coming from different localities, the differences may be too slight for the botanist's eye to detect. Nevertheless, in the one bed two-thirds of the leaves may be destroyed by mildew (*Botrytis*), whilst in the other not a leaf is affected. The extreme types on which species are founded are easily distinguishable, but a perfect chain of variations links them closely together; thus, there is no doubt that *C. Weedii*, *C. Plummerae*, and *C. obispoensis* are variations from one species. Absolute differences of size, dependent as they are on differences of environment, are of little value as points of distinction, but proportionate differences are of more value. Mr. PURDY describes forty species in two sections, each section divided into a number of groups. An ana-

lytical key will facilitate the identification of any particular species, a process still further aided by a full description of each species, with appropriate bibliographical references and explanatory notes. Figures of *C. Purdyi*, *longibarbus*, *luteus*, *Weedii*, and *macrocarpus* are given. The author, supported no doubt by competent authority, adopts the objectionable practice of spelling personal names with a small initial letter instead of a capital, a proceeding which we are glad to see is not followed in the new Supplement to the *Index Kewensis*. But this is a small matter. Of much greater moment is the fact that Mr. PURDY has laid gardeners, and especially garden-botanists, under great obligations by this publication, which will, we trust, be reprinted in some more easily accessible form than the *Proceedings of the California Academy*.



PODOCARPUS ANDINA AT PENJERRICK, CORNWALL.



THE

Gardeners' Chronicle

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EARLY TREATISES ON HEATING.

THE subject of heating is obviously one of great importance to all who have greenhouses, and it forms a very considerable part in the economy of the garden. To-day the whole question has become reduced into very narrow proportions, and it is scarcely likely that the many existing "best" methods now employed will undergo any very radical change in the future. Those who have interested themselves in old garden literature will have been struck with the great number of books, dealing with the subject of heating, which appeared at the latter part of the 18th and during the earlier years of the 19th century. Each writer had a new system to demonstrate, the chief qualifications of which were claimed to be efficiency and economy. In a general way, it may be said that these were just the two essential qualities which the old systems lacked.

The number and variety of systems must have been exceedingly embarrassing to amateur gardeners of small means. The discussion passed from beyond the limits of the gardening world, and the *Quarterly*

Review, in *Tan Article* on "Horticulture," some eighty years ago, took up the topic. The writer was probably only attempting to be amusing when he charged Sir George S. Mackenzie, a distinguished and enthusiastic writer on horticulture, with inventing an economical hot-house in which it is proposed to ripen Peaches in the dark! Sir George repudiated the soft impeachment in his pleasant "Gleanings" in the *Memoirs of the Caledonian Horticultural Society*, 1821. There were doubtless scores of other jokes and witticisms at the expense of the advocates and inventors of the various rival systems, but these may be passed over.

I have been fortunate enough to pick up a good many old books which deal wholly or partially with the all-important subject of heating. These books can hardly be described as "light reading," for the authors are all in deadly earnest. One of the earliest books of this class in my collection is by an author whose writings on agricultural and cognate subjects enjoyed a great popularity in their day, Dr. James Anderson, the title of his book being *A Description of a Patent Hot-House, which operates chiefly by the Heat of the Sun, without the aid of Flues, Tan Bark or Steam, &c.*, and is dated 1803. Anderson, who had written many books, chiefly on agricultural subjects, and was a member of many societies, was the son of a Scotch farmer, and himself appears to have had a good deal of experience of rural life in his earlier years, although the attraction of a literary career proved irresistible. A highly appreciative notice of him appeared in *Public Characters*, 1800-1801; but there is a suspicion that Anderson himself, as in the case of the other persons "biographed" in this publication, had a hand in the article.

In regard to Anderson's "Patent Hot-House," the author was clearly a man of theory rather than one of practice. The "mode of applying the principles" in connection with this patent hot-house are: "first, the management of the heat produced by the sun alone, and the modifications of which it is susceptible, with a view to produce the desired effect without the aid of culinary fire; and, second, the management of culinary fires so as to make them produce the greatest effect possible with the smallest expenditure of fuel, and the less expense in other respects." As to the form and construction of the house, Dr. Anderson says:—"Instead of making the roof of the hot-house sloped, as usual, let it be made flat, or nearly horizontal, like the ceiling of a room, and all the joinings of the glasses closed with the utmost accuracy; and the sashes which contain them screwed fast down, and joined close, so as to be airtight." Instead of a flue, "or other contrivance of that sort," "all of which are expensive," the Doctor selected an Argand lamp. The whole of the house is to be surrounded with glass, with as little woodwork as possible, and no brickwork of any sort is allowed. I need not, perhaps, go more fully into details, into which the author enters with an amazing passion for minuteness. He gives a plate of diagrams which appear to be perfectly simple in theory. It is perhaps of more interest now to point out that the inventor conveyed the right of his patent to George Byfield, the architect; Samuel Butler, hot-house builder, of Chelsea; and David Stewart, gardener and hot-house

builder, of Woodlands, Blackheath; and they unanimously declared themselves perfectly satisfied of the efficacy of the plan proposed, "but Mr. Byfield expressed a doubt if the expense of construction would not be greater than the inventor imagined." Dr. Anderson, however, determined to put his theory to the test, directed Butler to erect a house according to his design, and this, after a year's trial, and "notwithstanding those unavoidable blunders in the workmanship which are always experienced on a first undertaking," he "has found that it not only came up to his wishes, but greatly exceeded his highest expectations." The invention appears to have made little or no headway, and the Doctor himself died soon after—in 1808—at West Ham, Essex, at the age of sixty-nine.

The second book on the subject of heating in my collection is by an Irishman, John Cushing, and its title is *The Exotic Gardener*, in which the management of the hot-house, greenhouse, and conservatory is fully and clearly delineated according to modern practice. It was first published at Dublin, in 1811, and ran into a third edition, which was issued in London in 1826. Cushing was an Irishman, and was for many years foreman of the forcing department in the nurseries of Lee & Kennedy, at Hammersmith. G. W. Johnson states that he died in 1819 or 1820. He appears to have left Lee & Kennedy and settled in Ireland, as nearly all of the subscribers, of whom a list is appended to his work, are Irish. He has no new invention to describe, but gives plain, matter-of-fact particulars of his own system of culture—a system which, with some few reservations, was at that time generally followed in good gardens.

One of the earliest mentions of hothouses was communicated to the *Philosophical Transactions* for 1694, by Sir Dudley Cullum, and the paper is described as "a new invented stove, for preserving plants in the greenhouse in winter;" but little progress was made for many years, for even in 1721, when John Mortimer published his *Whole Art of Husbandry* (5th ed.), it would seem that glass was not employed in the construction of greenhouses—perhaps on account of its great cost, and artificial heat seems to have been obtained by open fires in holes sunk in various parts of the floor.* Evelyn, however, mentions the greenhouse and hot-house in the Chelsea Gardens, and observes: "What was very ingenious, was the subterranean heat conveyed by means of a stove under the conservatory, all vaulted with bricks, so that Watts, the gardener, has the doors and windows open in the hardest frosts, excluding only the snow." At about this period also, or a little later, we read in *Switzer* of Bishop Compton's greenhouses at Fulham Palace.

* Apropos of this, I find I have preserved a cutting from one of our daily papers, which is worth reproducing here, but "without prejudice":—

"A curious illustration is given of the way in which one of the houses in the Botanic Garden, Oxford, was heated in the early days of the past century. It was simply a brazier on wheels, and the duty of the gardener was to move this primitive furnace from one spot in the house to another, so as to ensure that the freezing-point should not be attained."

[Our correspondent has not read his *Gardeners' Chronicle* well, or the daily paper was unprofessional enough to quote without giving references, for the paragraph was taken from the *Gardeners' Chronicle*: Many years ago we saw that brazier at Oxford, and obtained our information about it from the veteran botanist William Baxter, the elder. Ed.]

So far as I have been able to find, Anderson's book, which I referred to at the commencement of this article, is the first independent treatise on hothouse building and management. The subject was much discussed at that period, more particularly in the transactions of horticultural societies, as well as in books on gardening generally. In the *Memoirs of the Caledonian Horticultural Society* for 1821, there is an interesting paper "On the Application of Steam to the Heating of Forcing-houses and other kinds of Hothouses and Frames," by John Hay, Planner, Edinburgh. He there gives the results of his experiments, along with a design for a steam valve. From his remarks it is interesting to learn that "the use of steam for the heating of hothouses in general has of late years been much attended to in the neighbourhood of London, particularly by Messrs. Loddiges & Sons, of Hackney." In 1812, George Todd, who described himself as a surveyor and hothouse builder, published a folio volume of plans, elevations, and sections of hothouses, greenhouses, &c.; and since that time the number of books on the subject of greenhouses and the best means of heating them has been, in the words of the local reporter, "too numerous to mention." W. Roberts.

NEW OR NOTEWORTHY PLANTS.

MOSCHOSMA RIPARIUM.*

This is a native of south tropical Africa, both eastern and western, and occurs also in Natal. It is a Labiate shrub, with hairy stems, stalked, ovate, cordate, crenate leaves, and very numerous small, cream-coloured flowers in erect panicles. Mr. Worthington Smith's sketch (fig. 35) gives a good idea of the general appearance of the plant as exhibited lately by Messrs. Veitch at the Royal Horticultural Society. The plant has also been in bloom for some time in No. 4 house at Kew, a circumstance which indicates that the plant is useful for the decoration of stove or warm greenhouses during the winter months.

ORCHID NOTES AND GLEANINGS.

CATTLEYA TRIANÆI.

MR. F. MASON, of Clevedon Court Gardens, Somerset, has sent us a peloriate flower having three sepals and two lateral petals normal, three lips perfect; one anterior in the usual position, two lateral; column normal. The column is generally considered to contain potentially six stamens, of which one only is usually developed. Supposing the column of the flower before us to be represented by A1, as in the Darwinian notation, then the two lateral lips would be the representatives of the two outer lateral stamens A2, A3.

CATTLEYA QUADRICOLOR ALBA.

A fine flower of this pure white Cattleya is kindly sent by Robert Tunstill, Esq., Monkholme, Brierfield, Burnley (gr., Mr. Balmforth). It is a white form of the plant known in gardens as *C. chocoensis*, and *C. Trianæi chocoensis*, but it is as well separated from *C. Trianæi* by its very broad petals, which are almost as broad as long, and by the peculiar arrangement of the segments of the flower, as any of the other forms of *C. labiata* are.

* *Moschosma riparium*, Hochstetter.—Baker, in *Flora Tropical Africa*, vol. v. (1900), pp. 351 and 523; *Basitium myristolachyum*, Hiern, in *Cat. Plant.*, Welwitsch, vol. i., p. 858.



FIG. 35.—*MOSCHOSMA RIPARIUM* (WINTER-FLOWERING SHRUB); FLOWERS CREAM-COLOURED.

Its identity with *Cattleya quadricolor* which appeared in the collection of the late Mr. Rucker in 1850, and which was published by Bateman in the *Gardeners' Chronicle*, 1861, p. 269, is well established. It is one of the most elegant of *Cattleyas*, its extraordinarily broad petals rendering it very attractive. The whole flower is pure white except the disc of the lip, which is yellow.

DENDROBIUM CAPILLIPES.

Pseudo-bulbs bearing flowers of this pretty little Burman species are sent by Mr. J. Cole, gr. to — Smallpage, Esq., Craigmoor, Little Orme's Head, Llandudno, where it is said to be flowering very effectively. The pseudo-bulbs, some 3 inches in length, are stout, and much resembling small ones of *D. albo-sanguineum*. The flowers, which are over an

named handsome form has flowered in the collection of Robert Tunstill, Esq., Monkholme, Brierfield, near Burnley (gr., Mr. Balmforth). It is a beautifully-formed flower, just over 3 inches across; and the sepals and petals, which are nearly equal in width, are 1½ in. wide; the plain-edged sepals are white, with clusters of three to four irregularly elongated, dark rose-red blotches in each; the fringed petals are pure white; the fringed lip white, with a yellow crest, beside which are several dark red spots, and in front one large reddish blotch. Distinct features about it are its fine shape, and the peculiar red-tinted colour of its markings.

ODONTOGLOSSUM TRIUMPHANS VARIETIES.

A large number of this fine *Odontoglossum* have already bloomed at Messrs. T. Rochford

The base of the lip is pure white, the middle portion brown, and the tip yellow. The lighter form more nearly approaches *O. triumphans*, but it has also an elongated apiculate labellum. The sepals and petals are yellow, closely marked with narrow, oblong, transverse, brownish-orange markings. Both are very singular and distinct. The lighter one has been proved to be constant, and the darker is now flowering for the first time from a small plant. It now bears but one flower, but with good cultivation the large size and peculiar features may be expected to be maintained on a large inflorescence.

LÆLIA ANCEPS HOLLIDAYANA CRAWSHAYANA.

In the *Gardeners' Chronicle*, February 10, 1891, the type of *Lælia anceps Hollidayana* was described by Mr. James O'Brien; and in the issue for January 27 of the same year, he described *L. a. Ashworthiana*, a figure of which was also given at p. 103 of the same date. Both were imported by Messrs. F. Sander & Co. from the Orizaba district, and the distinguishing features were the finely-formed flowers and the highly-developed, square-fronted labellum.

In the variety *Crawshayana* (fig. 36), for which De B. Crawshay, Esq., Rosefield, Sevenoaks (gr., Mr. Stables), was awarded a First-class Certificate at the Royal Horticultural Society on Jan. 28 this year, while the general characteristics of the type are closely adhered to, the variety is florally better in every respect than any of the section which have yet appeared. The flowers are of fine substance, white, with chocolate-purple lines on the inside of the side lobes of the lip; a yellow crest, and a delicate pencilling of rose-colour on the front lobe.

FLORISTS' FLOWERS.

WINTER-FLOWERING CARNATIONS.

In the interesting article on winter-flowering Carnations, p. 70, by Mr. T. H. Slade, there are one or two points which appear to me to invite criticism. First, as to the size of cutting used. Is not a cutting of 4 inches long far too large for the majority of varieties? Mrs. T. W. Lawson will strike freely, I know, at that size, but to produce the most prolific plants of the varieties mostly cultivated, small side-shoots from the flowering stems, and averaging perhaps less than 3 inches in length, are preferred, for they root more freely than stronger cuttings taken from the basal growths, which correspond with the layering shoots of our ordinary border varieties.

Secondly, as to the value of Mrs. Leo Rothschild, which I prefer to call by its original name of *Mlle. Thérèse Franco*. With me it is absolutely the most reliable of all, and may be flowered, and flowered freely, from September to May; and this is, I believe, the generally accepted opinion. I feel convinced that it is due in a great measure to the value of this variety that this class of Carnation is now so popular. I hope Mr. Slade will some day find cause to modify his opinion of its merits.

Mr. Slade does not mention Reginald Godfrey among his selected varieties. It is another of our best. The flowers are slightly paler than those of *Thérèse Franco*, but are very full, and the plant is a free grower. It is a true winter-flowering variety, in which it differs from many sent out as such. Flora



FIG. 36.—LÆLIA ANCEPS HOLLIDAYANA CRAWSHAYANA.

inch across, are borne on slender, upright stems either singly or in pairs; the large labellum and petals almost concealing the lesser sepals. The colour is bright yellow, the lip having an orange-coloured disc. It is a neat, dwarf, early spring-flowering species, and one which is by no means common.

Flowers of a fine variety of *Dendrobium crassinode*, and a *D. Wardianum* with rose-pink tips to the sepals and petals, instead of the usual purplish-rose colour, are also sent.

ODONTOGLOSSUM CRISPUM REEDLEYENSE.

Blotched varieties of *Odontoglossum crispum* have been first favourites for some years past, and during that time many fine forms have flowered out of the importations received. A marked peculiarity about them is that each variety is positively distinct from all others, and easily recognisable by some feature to those who study them. The above-

& Sons, Turnford Hall Nurseries, Broxbourne, and among them there is considerable variation of form and colour, though the typical characters of structure are in most cases maintained. Two forms, however, exhibit marked structural differences, which seem to indicate that they are natural hybrids of the *O. diceranophorum* class (*Lindleyanum* × *triumphans*): Reh. f., *Gardeners' Chronicle*, March 17, 1888, p. 330; although it is difficult to understand how such a combination should result in flowers with longer segments than those of *O. triumphans*. The darker flower has narrow segments, which measure from tip to tip of the sepals 6 inches. The colour of the sepals and petals is like that of a good *triumphans*, viz., bright yellow, with glossy chestnut-coloured blotches, and clear yellow tips. The lip is only about half as wide as that of typical *O. triumphans*, and nearly twice as long, the front being continued into an acute point.

Hill and Mary Godfrey are our two best whites; the former is not flimsy here, though perhaps its deeply fringed edge gives it a slight appearance of flimsiness—it is full, and very sweet-scented. Mrs. Moore, after many years' acquaintance, and Deutsche Brandt, a variety of very poor constitution, I am discarding. Mary Godfrey has smooth edges, and a shell-like petal; it is very chaste in appearance, though some of its later flowers are tinged with rose, which scarcely detracts from its appearance.

Firefly is an excellent scarlet of good constitution, which I prefer to Wm. Robinson, as it is not so tall. Both are, however, good varieties. Sir R. Buller is shy in flowering, and the shoots should not be stopped; but the qualities of the flower are so magnificent that it cannot be spared. Individual flowers last almost twice as long as those of any other variety we have. The work of selection is interesting. I am discarding this year about a score of varieties found wanting in some point or other, and am still retaining more than that number, including half a dozen of the latest American varieties for further trial, as their journey across the water prevented their developing perfectly. *J. C. Tallack.*

BULB GARDEN.

LILIUM GIGANTEUM.

IN his interesting papers on "Lilies and their Culture," Mr. G. B. Mallett writes that *L. giganteum* "cannot be cultivated with any measure of success in the open border." This statement from an authority on Lilies being calculated to dissuade amateurs from attempting the cultivation of this grand Lily because they are unable to provide it with "rather dense shade," I venture to reassure them by a few words on the fairly successful culture of *L. giganteum* in sites where little or no shade was available. It is a well-known fact that in its native habitat *L. giganteum* grows invariably in the shade thrown by forest trees, but, as in the cases of many plants that are capable of making tolerably satisfactory growth under conditions that do not obtain in their natural homes, this Lily, if its wants are well cared for in other matters, will often grow and flower well even in open situations. In a sheltered and moist valley in the neighbourhood of Torquay, I grew *L. giganteum* for several years, and many fine flower-spikes were thrown up from a bed that was shadeless from 10 A.M. to sunset. I believe that flower-spikes 13 feet in height have been recorded. My best spike fell short of this height by 3 feet 2 inches, but an average of 9 feet was not uncommon. A bed 3 feet in depth, consisting of three-parts leaf-mould and one of loam, was provided, and the plants were copiously watered while making growth, while weak liquid-manure was given when the flower-spike was being thrown up. In the winter the bed had a heavy mulch of decayed hot-bed manure. In the garden in question some thirty species of Lilies grew, and for the most part flourished. On the steep, dry slope of light soil where I am now living, successful Lily-culture, except perhaps in the case of *L. rubellum*, is out of the question. In other gardens I have seen flower-spikes of *L. giganteum* from 8 feet to 10 feet in height produced by plants growing in a sunny position. But the most striking instance of this Lily exhibiting vigorous health in an unshaded position was met with by me in a certain Cornish garden during the past summer; in this garden I witnessed a sight that I never expected to see,

either in England or elsewhere, namely, about seventy flower-spikes of *Lilium giganteum*, fifty of which were in one colony. It was early summer, and the rapidly-lengthening flower-stalks showed as yet no sign of buds, but all looked pictures of health and robustness, and no doubt attained the height usual in the species. All these Lilies were raised from seed, perhaps the most advisable method of propagation if one has patience to await the long-deferred blossoming. If bulbs instead of seeds are relied on, Mr. Mallett's recommendation that small and not first-sized ones should be planted must be followed, if fine flower-spikes are to be produced, since, although the season of waiting will be longer, the ultimate effect will be far more satisfactory, for fine spikes are never thrown up by recently-planted bulbs.

In conclusion, I would suggest to those who are anxious to grow *Lilium giganteum*, that if they have at their disposal a shady spot where the roots of the Lilies will not be encroached upon by those of surrounding trees, they should plant the bulbs there; but that if no such site be available, they need not despair of achieving success in an open and sunny site, provided they spare no pains in attending to the wants of the Lilies in other respects. *S. W. F., Kingswear, S. Devon.*

LILY OF THE VALLEY.

YOUR correspondent, "E. N., Chatham," notes a failure that is by no means an isolated instance. I believe at the present time more gardeners fail to flower retarded Lily of the Valley than those who succeed, and I think I may safely say that in nine cases out of every ten this is due to placing them in too much heat at first. The point to remember is this, that the energies of these plants or roots have been suppressed by keeping them in a very low temperature for months after their usual flowering season. Therefore, as soon as they are exposed to a temperature a few degrees above the freezing point, and away from keen draughts, they will commence growth and produce flowers. But if they are placed in a high temperature, such as your correspondent speaks of, viz., 75°, so surely will they fail.

I believe it was six or seven years since one of the large importers of Lilies called my attention to these retarded roots, at the same time sending me a few bundles for trial, with written instructions as to their management, which I carried out to the letter, and needless to say, proved satisfactory. Since that time I have flowered many thousands, and perhaps you will allow me a little of your space wherein to describe my treatment. There is not the least doubt in my mind that cool treatment for these retarded roots is the correct course, viz., a temperature of 45° is sufficient to start with. But supposing they were required in flower at a certain date, and there was any doubt about this, a rise of 5° will not do any harm, and will have the desired effect. Temperatures, however, are not all the requirements. They should be potted or boxed in rather heavy soil, very firmly indeed, and must be heavily shaded (kept nearly in the dark), and of course should receive a thorough application of water. They must never be allowed to become dry, or anything approaching dryness. Under this kind of treatment they will have made 6 inches of growth in about ten days, and may be exposed to a little more light; but the degree of moisture must be maintained, and no direct sunlight admitted, as to do this would prove disastrous, especially if the leaves and flower-spikes are well advanced. A considerable amount of

shade must be afforded till the flower-spikes are well open, fit indeed for cutting; in fact, spikes will not bear exposure to full sunlight at any time. I have in my mind those plants that are to flower during the Christmas season and January.

In the event of flowers being required in the summer or autumn months, a common garden-frame placed in a slightly shady part of the garden is an excellent place for them. I simply plant them out in rows, or rather spread the bundles out in shallow trenches, and made the soil thoroughly firm about them. The two matters to guard against are excess of heat and light, for either of these will prove fatal. Crowns treated in the manner described will flower in from twenty-one to twenty-four days after being taken from the refrigerator. I fear I have overstepped the limits of space, but should it seem desirable, I will deal with *Spiraeas*, *Liliums*, and other retarded plants at a later date. [Please, do so. Ed.] *Thomas Arnold.*

FLOWERS WHICH CHANGE COLOUR.

(Concluded from p. 107.)

BUT now we have to call attention to another fact, which has perhaps hardly been sufficiently observed. We have seen that individual flowers, like the Forget-me-Not, change from yellow or white to pink, red, and blue. Next we have seen that groups of plants, like the Geraniums, reveal a similar order. Now take the flowers of the seasons, and look at them broadly for a similar law. In the early spring, we have flowers which are green, greenish-yellow, and yellow, as the Moschatel, Ivy, Hellebore, Celandine, and Buttercups. Then come the white flowers, as Dead-nettle, Daisy and Oxeye, Campion, Bedstraws, Umbels; and when the summer is here, and insect life is fully developed, we find all our Clovers, Vetches, Heathers, Bluebells, highly coloured Composites, Roses, Mallows, Irises, Geraniums, and other red, purple, blue, and richly pigmented blossoms. The fact is too patent and conspicuous to be passed over unobserved, and its bearing is entirely in harmony with the conclusions which the study of the previous facts would suggest. But before we try to ascertain the moral, it will be necessary to meet some objections.

It will be remarked by some careful observer that there are several highly coloured flowers in spring. What are they? Our native flora yields few save the Violets. True, we may possibly find the Columbine, an early Furnitory, the Mezerion, and one or two other plants with coloured flowers; but they are the exceptions which prove the rule. Their study is full of instruction and suggestion, but they are to be regarded from another point of view if we would understand them fully.

Again, it will be said that it is no unusual thing to find white varieties of red, purple, and blue flowers, and that this shows the law to be unreliable. Here we have again to deal with a noteworthy exception. Bluebells, Milkwort, Thistles, and many other plants with highly-coloured flowers do vary considerably. The further north we go the more prevalent does the albino become. White heather, which is regarded as lucky, white Bluebells, albino bugles, and other forms abound in Scotland, Sweden and Norway, and it would be possible greatly to enlarge these notes if one were writing for those who are familiar with botanical terms and distant floras. There are, moreover, several books which the student can consult if he prefers reading about such subjects to going into field botany for him-

self. Climate, soil, disease, may account for many exceptions.

Let us now turn to the practical issue. Flowers tend to change colour. These colour changes are of various kinds, and are wrought out under the influence of definite laws. The first thing I want to notice is that fading flowers often assume a higher colour as they complete their life-work. What a beautiful fact if one were preaching a sermon. What a pity more preachers are not naturalists. The law has been well stated in the following words: "We may lay it down as a principle that the fading colours of less developed petals often answer to the normal colours of more developed." This law holds good also between the different species of a genus, or among the various members of an order. Thus we find many flowers in the Forget-me-Not group which are pink, flesh-coloured, or red, when perfectly developed. This colour corresponds with the early stages

addresses until that colour appeared." Bees and butterflies are quick at colour-reading, and they have their individual preferences. Here in my garden is a blue Speedwell, around which the bees are busy all the day. The Dandelion, and many other yellow flowers, will be found alive with beetles and flies, while the Scabious, Foxglove, Bluebell, Cornflower, Sage, Heather, and other red, purple, and blue flowers, are being visited by bees and butterflies. One further interesting fact must also be observed. The æsthetic taste of the bees correspond with our own. The colours and perfumes which please us gratify them as well. Thus, the stock of bright blossoms and fragrant flowers which we love, is perpetuated by their industry. If the case were otherwise, what pleasures should we lose! Who will account for this? Can anyone affirm that the matter is accidental? We prefer to believe it to be divinely arranged. *A Sussex Naturalist.*



FIG. 37.—DENDROBIUM WARDIANUM FOWLERI.

of other flowers which change to purple and blue in their ultimate stages. This general law again obtains in relation to the seasons, so that the blue and purple flowers predominate when the insects are fully developed.

It seems evident from these three converging lines, that we must arrive at the following conclusion: Colour has relation to insect life. The higher the colour, the higher the form of insect which is attracted. Yellow is the colour for beetles, blue for bees. This fact is capable of abundant demonstration. I give one or two illustrations in conclusion. In South America there exists a *Viburnum* which changes colour as its flowering advances. It is yellow on the first day, orange on the second, and purple on the third. Now Müller observed that various butterflies visited the tree, and he was struck by the fact that "each kind of butterfly which visited it stuck rigidly to its own favourite colour, waiting to pay its

DENDROBIUM WARDIANUM FOWLERI.

In this remarkable variety, which was exhibited at the Royal Horticultural Society, January 28, by J. Gurney Fowler, Esq., Glebelands, South Woodford (gr., Mr. J. Davis), we have an example of *peloria*, as it is called with flowers generally, but which among Orchidists is known as *tri-labellia*, and of which a familiar example is the now plentiful *Dendrobium nobile* (Cooksoni), which has steadily remained constant, and it is to be presumed the abnormal characters of *D. Wardianum Fowleri* will also be maintained. It will be seen by our illustration (fig. 37) that the two lateral sepals have yellow marking with a purple blotch, after the manner of the colour displayed in the labellum, the rest of the flower being white, with rose-purple tips, as in the normal form. The variety received an Award of Merit.

CULTURAL MEMORANDUM.

MELON GROWING IN POTS.

HAVING read the note from your correspondent on the above subject with much interest, may I be allowed to make a few remarks on this subject. Few gardeners of the present day practice the pot culture of Melons, thinking that the application of enough bottom-heat is impracticable. If fruits of middle size and fine flavour are desired, the seeds should be sown early in the month of March, then good results can be obtained.

Last year I made use of pots and secured a good crop (as reference to the *Gardeners' Chronicle* for September 21, 1901, will show), without bottom-heat, and from the time I planted them in the fruiting-pots no artificial top-heat, the thermometer in the house often falling to 48°, which may appear to some too low for success with Melons. My practice is to place a strong plant in a 12-inch pot, which is allowed to go on to its full limit before stopping it. The plant will make short joints (a thing greatly in favour of fruiting), and push out shoots at every joint, and nearly every one of these will show a fruit; but, it not being essential to set all the fruits at once that the plant is to carry, some of the blossoms are fertilised three weeks later, and this can be done with good results. All non-fruiting lateral shoots must be cut off close to the stem, and after the fruit has reached a safe stage, the plant may be fed to any extent; what I usually afford is manure-water, and maintain the feeding till the fruit showed signs of ripening, when it is discontinued.

By the use of pots the plants receive the full benefit of the manure. My plants showed no signs of canker, nor did the fruits split. *W. J. Cosham, gr., Hillside, Groombridge.*

NEW INVENTIONS.

A NEW KIND OF VAPORISER.

WE have recently received a vaporiser for use in glasshouses, now being manufactured and sold by Messrs. W. J. Bush & Co., Ltd., Ash Grove, Hackney, London, N.E. It consists of a black-tin cylinder 7 inches in height, and 1 inches in diameter, fitted with a door in the side, a portable dish of copper for holding the liquid, a glass lamp for holding methylated spirits, and a cotton wick, the whole being strongly made and well finished. The 3 oz. bottle of compound accompanying the apparatus is stated to be capable of fumigating a house or houses containing 4,000 cubic feet at the cost of 3s. 6d. As yet we are unable to certify as to the efficiency of the compound in destroying plant pests, but hope to test it shortly.

COOPER'S FLEXIBLE CARBON FIBRE.

Watching the articles pretty closely in the *Gardeners' Chronicle*, I was struck particularly with one a short time ago concerning leaf-mould as a medium in which to cultivate Orchids. I am pleased to say I quite agree with the writer in one thing especially, that is, artificial cultivation of Orchids require treatment somewhat different to what they obtain in their natural state. For one reason, we cannot hope to supply exactly all that they get in their wild state; and yet from my experience in some cases we are able even to improve them by intelligent aid, and I feel sure that much is to be done by those bold enough to try. I have ventured to send for the writer of the article two samples of what appears to fit in with his ideas, and wish par-

ticularly to be understood that I am simply writing as an inventor who, after patient experiments, believes in his invention. To be candid, I may say that I made a slight mistake in sending the fibre out in its pure state. I expected the majority would know what to do, but some, I am sorry to say, expected it to be entirely different to what it really is. You will see one canister is prepared ready for use for most plants, yet can be altered as found desirable. The other canister contains pure fibre unchopped, as a pad of it is useful to cover the crocks instead of sphagnum-moss, and for other purposes that will present themselves. I may say the patent has been completed, and that I am prepared to back it up with a thousand pounds if required to advertise it, but I find it is useless to bother with the trade for a start—they simply want to sell their plants, and do not care much for scientific research. *E. W. Cooper.* [Some well-known cultivators report favourably upon it, and we intend to have it tested still further. Ed.]

TREES AND SHRUBS.

HAMAMELIS MOLLIS.

MR. BURBIDGE tells us that this Chinese shrub is flowering in the gardens at Hamwood, Dunboyn, co. Meath. It is a fortnight earlier to bloom than *H. arborea* or *H. japonica*. It has thicker shoots, more softly tomentose, and the flowers are denser and more brightly coloured than in its allies. It was introduced from China by Messrs. Veitch, and is a most desirable addition to our winter-blooming hardy shrubs.

ROBINIA HISPIDA, AND OTHERS.

The so-called Rose Acacia is a shrub of large size, as distinct as it is handsome, producing great masses of flowers; in fact, its flowers are so numerous sometimes as to almost break down the bushes, and I have often been obliged to fasten them up to stakes. It is a plant well suited for growing in pleasure-grounds, large or small, and it generally does well in any kind of soil. At Compton Bassett they are planted in various positions, and they are unusually attractive. Another very pretty species is *R. pseudo-Acacia Decaisneana*, a shrub of more upright habit, with pink flowers, produced very freely. This species is of robust growth, and soon forms a fine tree. It should not be planted in exposed positions, or the wind will greatly damage it. The tree is not particular as to soil. *W. A. Cook.*

The Week's Work.

FRUITS UNDER GLASS.

By JAMES WHYTECK, Gardener to the DUKE OF BUCCLEUCH, Dalkeith.

Pineapples.—Fruiting Queens which have been rested, and are rather dry at the root, should now have the soil thoroughly moistened, and the bottom-heat maintained at 85° to 90°. the atmospheric heat being 65° at night and 80° with sun-heat by day. Let the air of the house be kept uniformly moist. Suckers of Queen Pines potted-up in the autumn into 6-inch pots should now be shifted into the fruiting-pots, that is, pots of 10 inches in diameter; and before the work is started, let fresh tan be got ready to mix with the old, fresh, turfy, and rather light and dry loam, and mix bone-meal with it; also see that the pots are well cleansed and properly drained. The suckers a few days previously should receive a thorough application of water. When the plants are turned out of the pots, remove the surface-soil and the crocks, slightly disentangle the roots, place the old

ball rather low down in the pot, fill in round it with small quantities of soil, making it moderately firm with a rammer, and afford no water for a fortnight. The newly-potted plants should be plunged in the freshened-up bark-bed at 2 feet apart, and afforded a bottom-heat of 85° to 90°, and top-heat at night of 60°, and 70° by day, and a little more when the sun shines. The house should be kept close for a week, and no effort made to force growth by higher temperatures than those I have given. If the plunging thermometer shows an excess on the above figures for bottom-heat, slightly elevate the plants by placing a little tan under the pots, replunging when the heat declines.

The Earliest Pot Vines.—The Vines should be top-dressed without loss of time, using turfy loam, mixed with Vine-manure. It is an advantage to have the pots placed on large turfs of fibrous loam, and on a solid base, and to sprinkle the turves with Vine-manure. A barrel of cowhouse drainings should be kept at hand, and as it is usually rather potent, only a very small quantity should be added to the clean tepid water used. It should be frequently employed. The gardener must carefully guard against the soil in the pots becoming soddened. Let growth be encouraged, restricting only the laterals on shoots which are carrying bunches. With bright days and cold weather ventilation must be carefully studied, reducing the amount of fire-heat in the midday hour when possible, and at the warmest part of the day, or when the house is 10° higher than in the early morning. Admit a small amount of air at the top of theinery, closing the ventilators early, and damping paths and surfaces frequently, using weak cowshed-water occasionally for damping purposes, the ammonia thereby given off being helpful to the foliage, and checking the spread of red-spider.

Early Vines in Borders having the fruit set, should have all of the bunches not required removed, and berries thinned on those that remain. Encourage the growth of foliage to the fullest extent of the space allowed, and what restriction is called for should be carried out at frequent intervals, it being bad practice to allow a lot of growth and then cutting it away. Maintain a night temperature on cold nights of 60°, or 5° more on mild nights, advancing to 80° or 85° in the daytime with sunshine; and during spells of cold winds the ventilation must be carried out, especially at the early stages, or the berries will be marked. Afford inside borders a sprinkling of Vine-manure, and wash it in with tepid water, or use water with weak liquid-manure; a mulch of rotten manure will now be a benefit on the border.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bickton, East Budleigh, Devonshire.

Spraying Fruit Trees.—The latter half of the present month is considered the best time for this operation, first completing any arrears in the matter of pruning, so that the wash can be put on before the buds get prominent. Doubtless the caustic soda and potash solution repeatedly recommended in these pages is the most effective, but on account of its corrosive action on the skin and clothes, many hesitate to make use of it. For spraying large trees the Stott sprayer is a capital invention, and at the present time is being used by the tenants on this estate upon orchard trees. It is used on the farms for spraying Charlock among Barley, but is easily adapted for using on fruit-trees by the addition of a few yards of hose and a fine-spraying nozzle. A calm, dry day is necessary for the work, and every care must be taken that the mixture does not come in contact with the skin. Besides destroying the insects that it touches as well as their eggs, also lichen and moss, leaving the tree bright and clean. To make this preparation, dissolve 1 lb. of crude commercial potash, 1 lb. of caustic soda, in 10 to 12 gallons of hot water, say at 110°; a little common treacle added will

make it stick on better. Apples, Pears, and Plums will stand it at the above strength, but for Peaches and Apricots 3 to 4 gallons more of water should be added. Keep the mixture well agitated while spraying is going on, and at the temperature stated above; but this is not always convenient.

Raspberries.—Established canes should have their tops shortened down to a plump bud. The canes planted in the autumn or early in the year are the better for being cut down to within 18 inches of the soil about the present date, and thus concentrate the energy of the plant for the production of strong growths for fruiting next year in preference to taking a few fruits this year. Autumn-bearing varieties require to be cut to the ground level at the end of February each year, and receive a good mulching of rich manure over the roots, which may be lightly forked in later on.

Bush fruits.—Newly-planted bushes of Gooseberries and Currants may be pruned into shape a bit, though if but one year from the cutting, which usually have three or four shoots, they will merely require shortening to within three buds of the base of each shoot. Gooseberries of erect habit of growth should have all shoots cut to a left bud, facing outwards; spreading-habited ones to a bud looking inwards; and pendulous-habited bushes to an upward-formed bud. The frosty weather at this date is very acceptable in the W. and S.W., as it will retard the blossoming of Apricots, Peaches, and Pears, which in these gardens are too far advanced for the time of year. Though the frost may be severe, pruning may be carried on for several hours during the warmer parts of the day; and recently planted trees of the trio just mentioned should be afforded whatever pruning is required before the buds get prominent. As the Apricot is the first to expand its blossoms, protection should be got in readiness, the erection and use of which will be dealt with in my next contribution.

THE KITCHEN GARDEN.

By T. TURTON, Gr. to J. K. D. WINGFIELD DIGBY, Esq., Sherborne Castle, Dorset.

Rhubarb.—Owing to the generally short Apple crop of last season, Rhubarb is in more demand than usual this season, and the supply must be kept up by placing a good batch of roots in a Mushroom-house at intervals of a fortnight. From now onwards I prefer Myatt's Victoria Rhubarb, which yields plenty of fine stalks of a nice colour. Where the supply of roots is not large, the forced roots will do for replanting, if properly hardened off when taken from the Mushroom-house, &c. They may be placed against the side of a hot-bed, and covered with leaf-mould, with some long litter over the crowns. Deeply trench and heavily manure the ground intended for the new plantation, which should be planted during the present month. Rhubarb pays for deep cultivation, and is most productive on retentive soils. The earlier varieties are showing signs of renewal of growth, and Seakale-pots may be placed over a few of the earlier roots, and surrounded with some sweetened fermenting material. Lacking Seakale or large plant-pots, boxes measuring 18 inches square at the bottom, 1 foot at the top, and 2 feet high, made with a cover, will answer instead. When made of seasoned Elm, they endure for several years. Some larger boxes, or barrels with the ends knocked out, are suitable for placing over crowns of Myatt's Victoria when they begin to grow, and no further protection beyond covering the top afforded.

Asparagus.—Where much Asparagus is forced, a certain quantity of land should be sown with Asparagus each year; and although a few weeks hence will be early enough to sow, the land should be now well prepared in readiness for sowing. Asparagus prefers a light, deeply worked soil, and it should be well enriched with good stable manure if the soil be retentive. In addition to a heavy dressing of the kind of manure named, roadside

trimmings which have been in good sized heaps for at least twelve months, river sand, charred garden refuse, old hot-bed soil, and anything of that nature should be incorporated with the soil in the course of trenching it. These additions will raise the soil considerably; and should the position be very damp, and in consequence cold, the beds should be raised still more by throwing soil from the alleys on to the spaces where the beds will be. I prefer sowing, to planting one or two-year-old plants.

Celery.—The seeds of Celery required early in September should be sown thinly forthwith in a compost of two-thirds good loam, and one-third equal parts spent mushroom-bed dung and leaf-mould, with a dash of silver sand, putting the soil into shallow boxes, and placing these in a temperature of from 55° to 60°. The boxes should be covered with sheets of glass, which need not be raised till the seeds have germinated. Place the plants near the glass, and harden them off so that they will withstand being pricked off into cold frames on hard bottom during April. It is usual to grow white Celery only for the early crop, as it blanches more readily than the red varieties. It is, however, advisable to sow an early pink or red variety also at the same time.

Sowing of Various Seeds.—Where a suitable border with a south or westerly aspect exists, small sowings of the following seeds may be made in skeleton frames made with 11-inch boards, and covered with spare lights from pits or frames, viz., Brussels Sprouts, Autumn Giant Cauliflowers, Early White Milan Turnips, French forcing Carrot, Radishes (Turnip and long-rooted), Leeks, Commodore Nutt and White Cos Lettuces. All of the above except Lettuce Commodore Nutt, which should be sown thinly broadcast and left to turn in for use, should be sown in drills made 9 inches apart. Sown thus, seedlings do not get drawn as when grown in hot-bed frames, and in the case of Brussels Sprouts, &c., they do not receive the same check as when transplanted from hot-bed frames.

THE FLOWER GARDEN.

By R. DAVIDSON, Gardener to EARL CADOGAN, Culford Hall, Bury St. Edmunds.

Gladiolus.—The corms should be planted as soon as the ground becomes fit for working; and if, as is usually done, sunny positions are chosen for the beds, groups, &c., and the ground is heavily manured and deeply dug, it will be ready for planting in March. Where small groups are to be planted, let the soil at planting-time be shovelled out to the depth of 4 ins., put in wheelbarrows, and place the corms at distances varying from 2 to 7 inches, according to the size to which the variety grows. The corms being firmly set on the soil, fill in the holes evenly with the excavated soil, and make smooth. If planted in borders, line out these into beds of about 5 feet in width, with alleys 18 inches wide between them, and draw drills at 10 inches apart and 4 inches deep, planting and covering the corms as above. Hybrids of *G. gandavensis* planted amongst *Hydrangea paniculata grandiflora* flower at the same season as the latter, and make an effective display. *G. The Bride* is excellent for massing in the herbaceous border, or associated with early-flowering Pentstemons of brilliant colours.

Hyacinthus candicans.—This ornamental Liliaceous plant makes telling masses in the front parts of the shrubberies, and the plant is not over-fastidious as to soil, but if a small quantity of sandy peat is incorporated with the staple, its needs are suited exactly. Proceed as with *Gladiolus*, but put the bulbs 3 inches down in the soil and 7 inches apart. Sprinkle some sharp sand over the bulbs before covering with the soil. In the event of severe frosts, a covering of cocoa-fibre refuse or half-decayed tree-leaves will keep out frost. When planted irregularly in beds or borders of Tree Peonies that are not too tall, the effects are highly decorative, or they may be planted in beds in company with *Gladiolus Brenchleyensis*.

Montbretias.—The flowers of these are of much value for cutting and decoration generally, and no time should be lost in planting them. For this purpose plant only selected and thoroughly matured flowering bulbs, on a south or west border. The plant succeeds in a light, rich soil, and they may be planted in beds similarly to *Gladiolus*, i.e., in drills 7 inches apart, and not more than half an inch between the corms, covering the whole evenly 2½ inches deep. Plant also in unoccupied spaces towards the front of the herbaceous border, where they afford a pleasing diversity of colour throughout the autumn.

THE ORCHID HOUSES.

By W. P. BOUND, Gardener to J. COLMAN, Esq., Gatton Park, Reigate.

Epidendrums for Covering Walls, &c.—*E. radicans* and the hybrid *E. O'Brienianum* are two Orchids adapted for training on the glass or solid ends of Dendrobium-stove or Cattleya-house, being fastened to bamboo-rods, and carried up to wires stretched transversely. The plants treated in this manner have pleasing effects when there is not much else in flower. When ably grown, the species named, more especially *E. radicans*, are nearly always in flower, and the flowers are useful for buttonholes. A suitable compost for these *Epidendrums* consists of equal parts of turfy-peat and chopped sphagnum-moss, and they should have plenty of light, a fair proportion of sunshine, and frequent syringings. The plants are increased by means of the aerial growths, which should be cut off and potted.

Trichosma suavis.—This pretty winter-flowering plant is now growing freely, and if potting is necessary this season, attention should be at once given to it. The plant succeeds in a compost consisting of good turfy peat two-thirds, chopped sphagnum moss one-third; the drainage should be good, so that the plant can have copious supplies of water during the spring and summer months without risk of souring the compost. A place in the cooler part of an intermediate-house suits the plant. Its fragrance, and the fact that it flowers in the winter, should make the species a favourite.

Phalenopsis.—The plants should still be kept rather drier than wet if the atmosphere in the house be kept humid as it should be. In some gardens, *Phalenopsis* are very difficult plants to grow, and it is not easy to define the reason why this should be. I have known them to succeed capitally in one house, and go back when removed to another where the same conditions have been maintained. An old house is preferable, and one where a very moist air prevails during the season of growth. A propagating-house where the moisture arises from the cocoa-fibre refuse plunging material laying over the hot-water pipes which supply the bottom-heat, often makes a suitable house. If the plants are suspended, the flower-spikes should be kept tied down away from the glass; and in the case of any plant not in good health, it should not be allowed to produce flowers. *Phalenopsis* will often throw up flower-spikes, when it would be fatal to let them remain on the plant. The moss should be kept well away from the centre of the plants. The temperature advised for the stove Orchid-house should be maintained.

Calanthes.—Most of the deciduous species and varieties having passed out of flower, should be afforded a rest; and if space is no object, the plants may be left in the pots and kept quite dry. Otherwise, shake them out, secure the labels to the pseudo-bulbs, and place the latter in shallow boxes with sand, keeping the dormant bud above the level of the sand. A shelf in the Cattleya or intermediate-house forms a suitable place on which to set them, or any house where the air is dryish, and the temperature does not fall below 55°. On no account should they be stored where they are exposed to full sunlight.

PLANTS UNDER GLASS.

By J. C. TALLACK, Gardener to E. MILLER MUNDY, Esq., Shipley Hall, Derby.

Humeas.—The earliest plants should now be ready for placing in the flowering pots, and not allowed first to get pot-bound. A mixture of peat, loam, leaf-mould, in equal proportions, and sand, is suitable; more peat or leaf-mould being employed if the loam is very tenacious. To afford water soon after potting is not advisable, and if the balls are in a fairly moist condition beforehand, and the potting soil is moist enough to bind without becoming pasty, no water will be needed for some time. Keep the plants in the greenhouse, as they dislike fire-heat; and do not use the syringe on them.

Begonia Gloire de Lorraine.—This is undoubtedly the most popular of winter-flowering Begonias, and its decorative merits are such as to make it quite invaluable in any garden. Given an intermediate temperature only when flowering, its season of growth is extended beyond the time when plants intended for stock should be at rest, and it is possible to keep the same batch of plants in a presentable condition as late as April, a date that is too late to commence the resting period that is necessary before good sucker-like cuttings, which can be relied on to furnish good plants, are produced. A portion of the stock of plants should now be divested of their flowers, removed to a house or pit with a temperature of about 55°, and kept for about a fortnight or three weeks rather dry at the root; at the end of that period the old flowering growths may be shortened to half their length, and when the suckers, which show renewed activity of the roots, appear, the remaining portions of the old stems may be cut hard back. Cuttings, perhaps, may be showing on these old stems, but these should not be relied on for propagation, as they never grow away with vigour. Some growers shake out and repot the old stools, but I have not found this necessary unless the soil has been soured with manure-water. In addition to plants raised from cuttings, some may be raised from the finest leaves, which can now be found on the plants. These should be dibbled in, with some two inches of stem, in shallow boxes of cocoa-nut fibre or light soil and sand, the leaf itself standing clear of the soil. In a temperature of from 65° to 70° roots will soon form, and be followed by good growths, but the leaves should not be placed in a close propagating-case, damping-off occurring if they are kept close.

Tuberous-rooted Begonias.—Some of the tubers may be potted up forthwith for early flowering, though I like to keep most of the stock back, for though not perhaps so good in autumn as in summer, they are generally much more useful then. All Begonias like decayed cow-manure, and this should be provided in the potting soil, which should consist of good sandy loam. Start them in a temperature of about 55°, and apply no water for some weeks after potting, as, given a moist soil at that time, the usual humidity of the house suffices.

Cyclamens.—Autumn-raised seedlings which have made at the fewest two leaves may be potted singly in thumb-pots, or several together in a 5 or 6-inch pot, or even pricked off in pans for the time being, affording each plenty of space in which to develop. Where the conditions of the house are suitable, and they can be kept close to the glass, I prefer to pot them singly. A temperature of not lower than 50° to 55° is most suitable at this stage.

Lapagerias.—Just now strong young basal shoots may be looked for on specimens growing in borders, and as slugs and weevils often cause injury to these, their appearance should be noted, and a collar of cotton-wool placed round the base of each shoot. A little thinning of the weaker shoots may now be effected, and the plants cleaned.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the **PUBLISHER**
Special Notice to Correspondents.—The Editor does not
 undertake to pay for any contributions, or to return the
 unused communications or illustrations, unless by special
 arrangement.

SALES FOR THE WEEK.

MONDAY, FEB. 24.—
 Border Plants, Perennials, Bulbs, &c., by Protheroe
 & Morris, at 12.
WEDNESDAY, FEB. 26.—
 Plants from Holland: Lilies, &c., by Protheroe &
 Morris, at 12. Bulbs and Plants, by Stevens & Son.
THURSDAY, FEB. 27.—
 Roses, Begonias, &c., by Protheroe & Morris, at 12.
FRIDAY, FEB. 28.—
 Orchids in great variety, by Protheroe & Morris,
 at 12.30.
 (For further particulars see Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced
 from Observations of Forty-three Years at Chiswick
 —40° 2'.

ACTUAL TEMPERATURES:—
 LONDON.—February 19 (6 P.M.): Max. 38°; Min. 35°.
 February 20.—Raw; damp; dull.
 PROVINCES.—February 19 (6 P.M.): Max. 45°, S. W.
 Ireland; Min. 34°, E. England.

The Cultivation of Orchids in Leaf-mould. THE use of leaf-mould in the cultivation of Orchids is attracting so much attention that we gladly lay before our readers the following remarks by M. LUCIEN LINDEN, whose cultivation of these plants leaves nothing to be desired. "We trust Orchid-growers will make experiment for themselves, and give our readers the benefit of their experience:—

"I see that in the newspapers, and particularly in articles published in the *Gardeners' Chronicle* and the *Orchid Review*, the question of growing Orchids in leaf-mould is attracting some interest in England. The opinion of those who have long cultivated Orchids, and studied the growth of these plants under various conditions, should, I think, have some value in this discussion. My opinion is shared by my foreman, M. VAN CAUWENBERGHE, whose ideas with regard to cultivation are the same as my own (and we have for twenty-seven years studied the subject together), should, we think, be of value, and it is our duty to make them known.

In the Moortebeek houses, the Orchid-cultivation in which is often eulogised in your columns, we are not partisans of the new method, for a very simple reason: from our own experiments, and from those that we have seen tried elsewhere, we have not yet found a system superior in its results to those obtained by us under the old system. We do not believe that the material, the sustenance for the plant, is of primary importance in Orchid-culture. Aëration, the degree of moisture given at different stages of their growth, the resting period, and a proper temperature, are the chief factors of success.

Whether the plants are cultivated on blocks (Cattleyas), in pots, in green moss, live sphagnum, leaf-mould, or in the roots of Polypodium, is a very secondary matter.

Orchids need no manure, and we never give them any. Formerly, my father grew all his Orchids in living sphagnum, and his plants were as fine as ours are to-day.

We might almost say that if material for repotting is of great importance in gardening, it is living sphagnum that we should recommend before everything else. When a plant is not doing well, be it an *Odontoglossum*, a *Cypripedium*, or a *Cattleya*, it is in sphagnum that it regains vigour—green sphagnum that

restores it to life. Life only can call back life.

Lately, to complete our experiments, we have bought right and left from amateurs and horticulturists *Cypripediums* and other Orchids cultivated in leaf-mould. The only living roots that we found were in the sphagnum over the surface of the pots; in the earth they were usually rotten.

We certainly do not wish to condemn the new system of cultivation; but the best result obtainable by the new method is that it will relieve amateurs from their apprehension in growing Orchids. A plant that can be repotted like a *Fuchsia* or a *Pelargonium* cannot be alarming. Therefore, in England and elsewhere, cultivation in leaf-mould should be tried, but not [*mais pas avec emballément*] to the exclusion of the ordinary method. Experienced growers, naturally, will understand why I say that it will only be of service to those who do not know how to cultivate Orchids.

If a commission be sent into Belgium to study the new system, I cordially invite them to visit our houses at Moortebeek, and to make comparisons for themselves. L. LINDEN."

MR. F. W. FLIGHT.—It gives us the greatest concern to find that we, in common with several of our contemporaries, were misinformed as to the death of this gentleman. The intelligence was conveyed to us at the last meeting of the Royal Horticultural Society, and we can only express our deep regret at the pain which we must unwittingly have occasioned, and at the same time our gratification at learning that Mr. FLIGHT is in good health.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Floral and Vegetable Committees of the Royal Horticultural Society will be held on Tuesday, February 25, in the Drill Hall, Buckingham Gate, Westminster, 1 to 4 P.M. A lecture on "The Use and Value of Nicotine in Horticulture," will be given by Mr. G. E. WILLIAMS at 3 o'clock.

—At the annual general meeting of the Royal Horticultural Society held on Tuesday, February 11, sixty new Fellows were elected, amongst them being Lady BOSTON, Col. J. HEAP, GEORGE H. BAXTER, F.Z.S., and the Rev. H. M. WELLS, M.A., making a total of 183 elected since the beginning of the present year.

—**EXAMINATION IN HORTICULTURE.**—Candidates wishing to sit for the Royal Horticultural Society's examination in horticulture on Wednesday, April 23, are requested to send in their names, with that of their supervisor, as early as possible. Entry forms may be obtained on application to the Secretary, Royal Horticultural Society, 117, Victoria Street, London, S.W. Applicants should enclose a stamp. The Society will also in future continue to hold its examination in April, and not in February, as it was once intended.

THE CULTIVATION AND CURE OF VANILLA IN SEYCHELLES are referred to in an interesting report by Messrs. BROOKES & GREEN, of Mining Lane, who state that the vanilla industry has been most successful in the island, and that Seychelles vanilla is superior as regards quality and value to all except Mexican vanilla. The island possesses a magnificent harbour, and the climate is very healthy; but owners of vanilla gardens have anxious times, a prolonged drought interfering most seriously with successful flowering, while between that period and fructescence the plants are frequently damaged by gales of wind, so that plantations which gave early

promise of a good crop finally yield but a poor result. When ripe and ready for harvesting, the beans (pods) are in a green, damp condition, and the process of curing and preparing the vanilla for shipment to London requires much care and attention, any parcels packed too damp (immaturely cured) almost invariably contracting "mould" on the voyage, and the value being thus largely reduced. The crop for 1901, shipped during the months of August to December, totalled "fully double" the heaviest quantity exported from Seychelles in any previous season, and the present season's crop will probably reach the important quantity of about 80 tons. *Pharmaceutical Journal*.

GARDENERS' ROYAL BENEVOLENT INSTITUTION AT LIVERPOOL.—Those who are in sympathy with the work and aims of the Gardeners' Royal Benevolent Institution will be glad to learn that a representative committee has been in Liverpool, to arrange a smoking concert to be held in the City Hall, Eberle Street, on Wednesday, March 12. Professor R. J. HARVEY GIBSON, M.A., F.L.S., Professor of Botany, Liverpool University College; H. J. VEITCH, Esq., and Mr. GEO. J. INGRAM, secretary of the Institution, will deliver addresses. The chairman of the committee is Mr. C. A. YOUNG, of the Floral Nursery, West Derby; secretary, Mr. R. G. WATERMAN; and treasurer, Mr. CRIPPEN. Donations will be thankfully received.

PRESENTATION TO A GARDENER.—On the occasion of the annual supper of the West Derby Horticultural Society on the 12th inst., the Chairman, Mr. C. A. YOUNG, presented to Mr. JOHN MASSEY, gr. to Mrs. HIGNETT, of Bankfield, West Derby, a silver and Oak "Tantalus." Mr. MASSEY, in returning thanks for the gift, said that it was also his 71st birthday. The inscription read: "Presented to Mr. JOHN MASSEY by a few friends, on the completion of 40 years' service at Bankfield." Mr. MASSEY incidentally remarked that he had been gardener at Bankfield to nine employers, and that he had seen the estate for the third time put up by auction, quaintly remarking that he supposed he had been bought in.

CHINESE CONIFERS.—In a communication to the *Bulletin of the Italian Botanical Society*, October 13, 1901, Mr. BEISSNER describes the Conifers collected by Father J. GIRALDI in Shen Si. Among them are *Larix chinensis*, *Cephalotaxus Griffithii*, a Himalayan species; *Juniperus taxifolia recurva*, and *Ginkgo biloba*, the native country of which has not been known till lately.

FRUIT AND FARM PRODUCE BY RAIL.—The authorities of the Great Eastern Railway Co. inform us that during the half-year ending in December last, the number of farm produce boxes forwarded to their destinations was 65,000, showing for the first time a decrease, as compared with a similar period. The falling off was caused principally by the partial failure of the fruit crops in the eastern counties, and also to the long drought during the summer months, which adversely affected the eggs and poultry traffic.

POISON!—The *Staffordshire Sentinel* for January 30 reports that a firm which manufactures a nicotine insecticide for horticultural purposes appears to have sent it out to seeds-men and florists without any indication of its poisonous nature; consequently the retailers, knowing nothing whatever about the dangerous properties of the liquid, supplied it to a customer in an old brandy bottle without a proper label. As a result, a gardener mistook

the insecticide for some beer, which it closely resembled in appearance, and died shortly afterwards.

SPRAYING.—At a recent meeting of the Nova Scotia Fruit Growers' Association, Dr. FLETCHER remarked that the spraying of fruit-trees was suggested in Canada first before the Association sixteen years ago, and he had had the honour of bringing in the suggestion. Yet after all these years of discussion, many people did not yet understand how to spray. Drenching a tree is not spraying it. Throwing a mixture over it in patches is not spraying. Spraying means enveloping the tree in a spray or fog so that every part may be wet but not drenched. Some men have a habit of using the same remedy for any insect that may be on the trees without regard to what the insect is. We spray, he said, too often without an intelligent idea of what we are doing. We should remember that there are two kinds of insects, those that chew and those that suck. We should spray with arsenates for insects that chew, and use an oily coating for those that suck. Fungus diseases also need their special remedies.

GARDEN ANNUAL FOR BELGIUM.—There has recently been issued a useful "Annuaire de l'Horticulture, de l'Arboriculture fruitière et de la Culture Maraîchère en Belgique et des Industries qui s'y rattachent." The scope of this work may be understood from its long title; it forms a large octavo volume, and should be useful to those for whom it is intended. It may be obtained from the Administration, Coupure, 15, Ghent, Belgium.

BOTANIC GARDEN, BRUSSELS.—The *ad interim* appointment of M. DURAND as Director has now been made permanent.

THE GHENT QUINQUENNIAL.—Yes, positively! the next Exhibition will be held in April, 1903. If we had not the schedule before us, we should have said that the last meeting was held the year before last!

"CASSELL'S DICTIONARY OF GARDENING" is well got up, and well illustrated; the text is accurate and suitable for amateurs, who will find it very serviceable for their requirements.

"RELIQUIÆ DEWEVREANÆ."—This is a sumptuous publication, prepared by MM. EM. DE WILDEMAN and TH. DURAND, of the Brussels Botanic Garden, and devoted to the description of the plants discovered in the Independent Congo State by M. ALF. DEWEVRE. It is published under the auspices of the Government of the Congo State. The technical descriptions are accompanied by useful notes. Two new or recently-described species of *Hæmanthus* are mentioned, viz., *H. Eltveldeanus* and *H. Arnoldianus*.

"INDUSTRIAL AND COMMERCIAL JAPAN."—This publication, by DENNISON GRAY (printed by the Yokohama Bunsha, Yokohama, Japan), deals with modern Japan, the "commercial, shipping, manufacturing, industrial, and general business capabilities of the Empire." It is, in fact, an illustrated account of the buildings and wares of many of the principal business firms of Japan. It includes an account, with pictures, of the nurseries of L. BOEHMER & Co., of Nos. 5 and 28, Bluff, Yokohama.

STOCK-TAKING: JANUARY.—The year has opened with a very considerable increase in the matter of imports, i.e., £4,143,832, some of which is due to the "budget" anticipations of speculators—this especially under the headings of "articles of food dutiable," where sugar looms largely. The total value of im-

ports for last month is £50,131,348, as against £45,987,516 for January, 1901—hence the increase above recorded. The following is our usual extract from the "January" table:—

| IMPORTS. | 1901. | 1902. | Difference. |
|--|------------|------------|-------------|
| | £ | £ | £ |
| Total value ... | 45,987,516 | 50,131,348 | +4,143,832 |
| (A.) Articles of food and drink—duty free ... | 13,843,506 | 14,589,213 | +1,045,707 |
| (B.) Articles of food & drink—dutiable ... | 4,084,853 | 5,383,665 | +1,298,812 |
| Raw materials for textile manufactures ... | 9,218,659 | 10,892,272 | +1,673,613 |
| Raw materials for sundry industries and manufactures ... | 4,073,790 | 3,872,232 | —201,558 |
| (A.) Miscellaneous articles ... | 1,435,851 | 1,958,030 | +522,179 |
| (B.) Parcel Post ... | 87,462 | 94,305 | +6,843 |

This table is somewhat fuller than of yore, and this may not be considered quite an improvement; one item is so, however—the markings of differences by the signs plus and minus, whereby a column is saved. The usually interesting figures are to be found under fruits, roots, and vegetables, as under:—

| IMPORTS. | 1901. | 1902. | Difference. |
|---|---------|-----------|-------------|
| | Cwt. | Cwt. | Cwt. |
| Fruits, raw:— | | | |
| Apples ... | 288,151 | 186,989 | —101,162 |
| Apricots and Peaches ... | 19 | 16 | —3 |
| Bananas... bunches ... | 119,834 | 157,053 | +37,219 |
| Grapes ... | 4,610 | 1,002 | —3,608 |
| Lemons ... | 97,495 | 126,144 | +28,649 |
| Nuts—Almonds ... | 4,989 | 14,316 | +9,327 |
| Others, used as food ... | 42,691 | 36,363 | —6,328 |
| Oranges... .. | 833,341 | 1,032,064 | +198,723 |
| Pears ... | 1,237 | 557 | —680 |
| Plums ... | 4 | 38 | +34 |
| Unenumerated, raw... .. | 6,235 | 6,822 | +587 |
| Fruits, dried:— | | | |
| Currants, for home consumption ... | 39,315 | 82,927 | +43,612 |
| Raisins ... | 17,673 | 29,114 | +11,441 |
| Vegetables, raw:— | | | |
| Onions ... bush. ... | 490,774 | 576,180 | +85,406 |
| Potatoes ... cwt. ... | 451,055 | 285,001 | —166,054 |
| Tomatoes... .. | 37,768 | 17,814 | —19,954 |
| Vegetables, raw, unenumerated ... value | £27,680 | £32,719 | +£5,039 |

One feature of interest to all has yet to be added to the Returns of the Board of Trade, and this is a brief statement of all the canned fruits imported.

THE EXPORTS

for the month are valued at £24,254,574, as against £24,753,531—the resulting decrease being £498,957. Coal exports are to some extent responsible for this falling off; but for which an increase on last year's total would have occurred.

MR. G. C. CREELMAN has been appointed Secretary to the Ontario Fruit-Growers' Association, leaving Mr. WOOLVERTON to edit the *Canadian Horticulturist*. Mr. CREELMAN is a graduate in agriculture from the University of Toronto, has been Professor of Biology in the Agricultural College of Mississippi, and has had much experience in teaching.

COMING EXHIBITIONS.—We have received a number of schedules of forthcoming horticultural exhibitions, among which are the following:—

THE DURHAM, NORTHUMBERLAND AND NEWCASTLE BOTANICAL AND HORTICULTURAL SOCIETY will hold a spring show on April 1 and 2, and a summer show on July 23, 24, and 25, both at

Newcastle. At the former exhibition there will be as many as sixty-seven classes for plants in bloom and cut flowers; whilst the same number of classes at the summer exhibition will include plants, cut flowers, floral decorations, fruits, and vegetables. The summer show has been postponed for a fortnight since our Almanack was published. The Secretary is Mr. J. B. REID, Mosley Chambers, 30, Mosley Street, Newcastle.

THE GRAND YORKSHIRE GALA on June 11, 12, and 13, in the Beetham Field, York, is expected to prove as fine a horticultural exhibition as any of its predecessors. There are ninety-four classes in the schedule, and a sum of £750 will be offered in prizes. This sum will be divided as follows:—£300 for Orchids, stove and greenhouse plants; £200 for Pelargoniums, Carnations, Begonias, &c.; £150 for Roses, cut flowers, &c.; and £100 for fruits and vegetables. The Pelargoniums and Fuchsias staged at York are now-a-days much finer features than at most exhibitions. The Secretary is Mr. CHAS. SIMMONS, The York Hotel, York.

THE ANCIENT SOCIETY OF YORK FLORISTS, instituted, as the schedule says, in time immemorial, and re-established in 1760, will hold minor shows on April 16, May 21, July 16, and September 3. At these exhibitions members of the society only may take part. The twenty-sixth annual Chrysanthemum show, which will take place on November 12, 13, and 14, is of a different kind, and contains many open classes. Altogether there are 113 classes for Chrysanthemums, fruits, and vegetables, and the prizes offered are of a very liberal character. The Secretary is Mr. GEO. F. W. OMAN, 38, Petergate, York.

THE ROYAL HORTICULTURAL SOCIETY OF SOUTHAMPTON have arranged to hold exhibitions on July 1 and 2, and on Nov. 4 and 5. The summer show will be for general horticultural exhibits, including Roses; and the autumn exhibition for Chrysanthemums, fruits, and vegetables. The Secretary is Mr. C. S. FUDGE, 6, College Terrace, London Road, Southampton.

THE COUNTY-BOROUGH OF HANLEY HORTICULTURAL FÊTE becomes a more important exhibition each year, and being situate in almost the centre of the thickly populated district in North Staffordshire known as "The Potteries," there are plenty of visitors to make the shows financially successful. The committee has now a balance at the bank of £2,287 14s. 6d., and the income in 1901 was £4,396 3s. 5d., as compared with £3,632 5s. 10d. in 1900. We have an advance proof of the schedule, which shows that very liberal prizes are offered for a great variety of horticultural subjects. It will open on the same day as the show of the National Rose Society in the Temple Gardens (July 2), a circumstance which will prevent some from visiting Hanley who may otherwise have done so. The Secretary is Mr. J. KENT, Hanley Park, Staffordshire.

THE TORQUAY DISTRICT GARDENERS' ASSOCIATION will hold a spring show on March 26, and a Chrysanthemum show on November 5. This is one of those societies that holds meetings for the discussion of horticultural subjects, as well as promote exhibitions; and the society possesses a library containing 100 valuable books. The Secretary is Mr. G. LEE, The Lodge, Upton Leigh.

THE KENT COUNTY CHRYSANTHEMUM SOCIETY held their annual shows at The Rink, Blackheath, and the next one has been arranged for October 29 and 30. The Secretary is Mr. F. FOX, The Gardens, The Cedars, Lee.

THE SHROPSHIRE HORTICULTURAL SOCIETY will hold its spring show, on April 9, when prizes will be given for plants and cut flowers in twenty-seven classes. This early exhibition, however, is not so interesting to the majority of our readers as the great floral fête which will take place on August 20 and 21 in The Quarry, Shrewsbury, and at which a schedule just to hand declares there will be offered more than £1,000 in prize-money, besides a "Silver Challenge Vase for Grapes, value 50 guineas, five Silver Cups, Gold and Silver Medals, and other valuable prizes." Very great encouragement is again offered exhibitors of groups of plants arranged for effect, and for collections of specimen plants. In the cut flower section there are classes for all, or very nearly all, the principal species in season. In the two principal fruit classes alone a sum of £100 is offered, besides a 50-guinea Challenge Cup, &c.; there are excellent classes for vegetables also. The Shropshire Horticultural Society shows itself determined to maintain its exhibitions the best displays of horticultural produce in the provinces, and this, notwithstanding there are many others that are now conducted much upon the same lines. The Hon. Secs. are Messrs. ADNITT and Naunton, The Square, Shrewsbury.

THE SURVEYORS' INSTITUTION.—The next Ordinary General Meeting will be held in the Lecture Hall of the Institution, on Monday, February 24, when a Paper will be read by Mr. ROWLAND BERKELEY (Associate), entitled, "Electric Railways and Street compensations." The Chair will be taken at 8 o'clock.

ACREAGE UNDER FRUIT.—The following is a brief outline of the statistics relating to the fruit crops in 1901, as published in an agricultural return just issued by the Board of Agriculture. The total area under orchards in England was 228,580 acres; that under small fruits, 67,828 acres. Wales shows a total of 3,767 acres under orchards; and 1,092 acres under small fruit. Scotland has 2,313 acres under orchards, and 6,079 acres under small fruit. The Isle of Man has 307 acres in orchards, and 139 acres under small fruit. Jersey possesses 1,027 acres of orchards, and 117 acres under small fruit; whilst Guernsey and the other Channel Islands have 207 acres in orchard, and 343 acres in small fruit. In Ireland, in 1901, there were 4,877 acres under small fruit.

CAPE FRUIT.—The ship *Norman* has brought 662 boxes of Peaches, 248 of Plums, 151 of Nectarines, and 47 of Pears.

PRIOR PARK.

THE subject of our Supplementary illustration this week, is the charming Palladian-bridge in the grounds at Prior Park, near Bath. Prior Park Mansion was built during the eighteenth century for Ralph Allen, whose name was closely connected with postal reform, and who enjoyed the friendship of many of the learned men of his day. The lands were once the property of the Priors of Bath, and in this way doubtless its present name originated.

The building is situated on the crest of one of the hills that surround Bath, and from its terraces may be obtained an exquisite view of the fine old city. A nearer view from the terrace is one consisting of the grounds of Prior Park themselves, with the Palladian-bridge almost at their termination.

Looking directly from the centre of the mansion, the ground dips away steeply in a most beautiful ravine-like valley, whose banks on right and left also slope markedly from the

terrace, and are ornamented by handsome groups of fine trees. The lakes are terraces, and the delightful effect of the bridge, in the grand "setting" that the grounds afford it, can scarcely be described.

Our photograph, taken by Mr. W. Rossiter, of Bath, does not give much idea of the lovely grounds, but well depicts the bridge in very near perspective. It is a fine specimen of Georgian architecture, and was built in 1751, when its design was no doubt copied from the famous bridge at Wilton.

The Palladian mansion, with its two wings, is very remarkable for extent and for magnificent workmanship, and during the middle of the eighteenth century was the scene of a social life of the highest culture, it having been the haunt of poets, authors, and actors of repute. Gainsborough painted his celebrated portrait of Garrick here. The poet Pope had a favourite walk in the grounds, which has since been named after him. Pope did not like Bath, and was staying at Prior Park when he wrote: "I live out of the sulphurous pit, at the edge of the pit, at Mr. Allen's, for a month or so." Fielding, Quin, Bishop Warburton and many other well-remembered men frequented the place as the guests of Ralph Allen.

For very many years past the mansion has been used as a Roman Catholic school, but visitors to Bath who may desire to see the beautiful grounds can always obtain permission to do so. Our photograph was taken when the grounds were looking their best, and the trees were resplendent with foliage, but even on Monday last, when we were there, the winter scene was a beautiful one.

THE CULTURE OF ANÆTOCHILUS.

In the *Gardeners' Chronicle* of December 7, 1901, p. 410, Mr. James O'Brien, in an interesting article entitled "Imported Orchids," mentions the *Anætochilus* as being plants generally found difficult to cultivate, and his success with them some years ago by frequently propagating them, and growing them in a compost mainly of loam-fibre. The use of loam-fibre I consider of special significance, for in loamy soil they are always found growing, and never in the light Orchid-peat and moss in which they are often potted in gardens. I am very fond of these jewelled members of the Orchid tribe, and as I have seen, as you will readily believe, a good many in their native habitats, I will venture to make a few remarks, which I hope may interest your readers, and which perhaps may help to make the beautiful *Anætochilus* better understood.

Now I assert that *Anætochilus* are not at all so delicate as they are generally supposed to be! I am certain that the real fact of the matter is, that these plants are starved to death, or killed with kindness, and that they do not die much faster than is the case now; only proves their great natural vitality. Now as you well know, the *Anætochilus* are ground Orchids. They are found in forests growing in very rich loam. I have never seen one growing in moss in its native country. Yet what do I see at home? There, as a rule, they are planted in the old orthodox mixture of sphagnum, charcoal, and fibre rubbish, which may be suited very well for an Epiphyte, but hardly for a ground Orchid. Then they are generally put under a glass shade, so that the poor things cannot even get much sustenance from the air. The result, of course, is that the plant weakens, gets delicate, and ultimately dies; and the plant is blamed, and not the method of cultivation.

I am well aware how difficult and often impossible it is at home to give a plant the exact natural conditions it enjoys in its wild state, and modifications have to be considered, yet I am sure if growers would procure some nice surface-loam out of the forest, and place the plants just loosely on this lumpy material, mixed perhaps with a little silver sand to keep it well open, and always keep it damp, they would be surprised at the result.

To show how hardy the *Anætochilus* are, I will just relate the story of the introduction of *Anætochilus Sanderianus*. I found the plant in British New Guinea, where it grows at an elevation of between 1,000 and 2,000 ft. I collected a good number, but had to keep them about a month before I could get away. A white mycelium was very troublesome, several times destroying a whole boxful in a single day. At last I was fortunate enough to get a passage in the mission steamer *John Williams*, which brought me and my plants safely to Cooktown. I intended to go to Singapore *via* Batavia. When applying for a passage per Royal Mail S.S. *Queensland*, the answer I got was "First steamer full, second steamer full also." I offered £10 extra, but it was useless. There were no other steamers. To go *via* Sydney was impossible, on account of the winter, so there was no help for it but to wait. I was despairing of keeping my plants alive—nine weeks in Cooktown in the winter would kill anything, I felt sure. Cooktown is the windiest place I was ever in. In the hotel the only sheltered spot I could get was a tiny bit of a court-yard, half garden, just outside the billiard-room. But even there the wind used to sweep down in strong gusts continually, the rain was icy cold, and I am afraid occasionally the billiard players watered my plants in a manner not at all suited to such delicate things. But in spite of all this wind, rain, and cold—I used to feel cold under two blankets—my *Anætochilus* were flourishing, and even growing, though unluckily two grand *Impatiens*, a gorgeous *Didymocarpus* (?), and several other new things died.

After nine weeks I got away, and after twelve days arrived at Batavia. I waited four days there, in two more days I reached Singapore. When I arrived there, my plants looked almost as fresh as they did when I started from New Guinea, and I had not lost a single *Anætochilus* after leaving there. After some delay at Singapore, Mr. Fox, of the Botanic Gardens, who was going home on leave, was kind enough to take them home, and Messrs. Sander received them at St. Albans almost as fresh as they were when collected. I do not think any other kind of Orchid would stand such prolonged rough treatment half so well.

Then take the grandest of all *Anætochilus*, I mean *A. Leopoldi*, with leaves 6 inches long and 4 inches broad, and most wonderfully marked. When the plants arrived in Belgium they had been on the road over three months, yet they were so good that they were exhibited at the Ghent Quinquennial show, where I have no doubt you saw them.

In Singapore I have seen them in private gardens, just potted in ordinary soil, and treated by native gardeners just as they treat *Begonias*, *Caladiums*, and things of that sort, and they do very well.

But I think I have said enough to convey my impression, that if people would seek to understand the *Anætochilus*, and treat them rationally, and more like other plants, there is nothing in their nature which prevents them being easily grown. W. Nicholitz, *Bhamo*, January 12, 1902.

DERMATOBOTRYS SAUNDERSII.

I FEEL that I have done this plant a wrong, and hasten therefore to make reparation. It had not flowered very freely until this season, and I concluded that, although very interesting and suitable for a botanic garden, it was not ornamental. It is interesting as being the sole representative of its genus, one also not closely allied to any other; and it is interesting on account of the nonconformity of its structure with that of any Natural Order to which it can be referred. One authority has referred it with little hesitation to the Solanaceae; while another, on account of characters foreign to that Order, has referred it to the Scrophulariaceae, where no similar plant is found. It is somewhat distinct type, upon which certain questions might be raised. All this, indeed, I had recognised, but now I find

The accompanying illustration (fig. 38) has been prepared from a photograph kindly taken for me by my foreman of the plant-houses, Mr. E. Allard, who has succeeded in obtaining a very good representation. The plant was introduced to Kew in 1892, and is figured in the *Botanical Magazine* of 1891, t. 7369. It is there stated, on the authority of Miss Katherine Saunders, who sent seeds and living plants to Kew, that "the shrub is epiphytic, growing normally on trees, though also on the ground." It will be noticed that the branches are sometimes thicker above than below, a feature which does sometimes belong to epiphytic plants, and it recalls *Drymonia punctata* to my mind at this moment. *Dermatobotrys* we have only grown as a pot-plant, under which treatment it does perfectly well. It is a native of Natal and Zululand. R. Irwin Lynch, Botanic Gardens, Cambridge.



FIG. 38.—DERMATOBOTRYS SAUNDERSII: FLOWERS RED.

That apart from interest, nothing could be more quaintly ornamental for the conservatory. The plant has an irregular manner of branching, though all principal branches proceed from a round knob-like base—a kind of hub. In autumn they lose all their leaves, and after a short time burst into growth, the flowers then appearing just at the juncture of the old and new wood, and crowned as it were by a tuft of fresh green foliage. The flowers are $1\frac{1}{2}$ inch long, of coral-red colour, and curved in a graceful manner. There are sixty-five on the plant here illustrated. It has been grown in a cold greenhouse, and is at least three years old, though only a foot high. It gives evidence of being a very useful winter-flowering plant, not growing inconveniently large, and not requiring to be re-struck from cuttings every now and then to produce the best result; indeed, the only drawback it appears to have is, that it does not at once become fully floriferous.

WINTER FLOWERS AT NORTH MYMMS PARK, HERTS.

It may at once be stated that what is grown here is of the best. The winter-flowering Begonias are the newest which Messrs. Veitch & Sons, of Chelsea, have distributed, together with the less modern *B. Gloire de Lorraine* and *B. Gloire de Sceaux*. Of each of these there were many fine specimens, grown in the case of the last few months from the cutting to a height of 4 feet, and almost as much in diameter. The last-named winter-flowering variety is not seen so often as it might be, and grown in the manner as it is here. The plants of *B. Gloire de Lorraine* were equally fine, and models of form. This variety is grown chiefly in 6-inch pots, and the plants had attained a height of 28 inches and a diameter of 2 feet, free-branching pyramids, and with but half the tying usually seen. I observed a number of fine plants of *B. socotrana*, the leaves handsome and shining, with numerous sprays of pink

flowers. The specimens of *B. Ensign*, a variety which was ablaze with flowers, were handsome plants, about 2 feet high, and unique for richness of colour. The plant increases with age in the richness of colour and size of the flowers. *B. Turnford Hall* was here, too.

The display does not consist entirely of novelties, for Mr. Fielder, gr. to Mrs. Burns, grows quantities of plants of *Centropogon Lueyanus*, *Ruellia macrantha*, fine specimens in full flower. *Lilium speciosum*, which had been retarded, were among those observed. Carnations are grown in great numbers, especially *Souvenir de la Malmaison* for flowering later. An excellent variety that was in bloom was *America*, a large and handsome flower of a shade of scarlet. As here grown, with one flower on one stem, the latter about 15 inches high, it is really very fine, and with no apparent liability to burst the calyx; the variety is nicely scented. Houses of a large size are set apart for Roses, and gave evidence of a good display of flowers to come. J.

CYTISUS RACEMOSUS.

It shoots 3 inches long and furnished with a heel of the older wood be taken at this season, and stuck-in round the rims of small well-drained pots filled with a sandy loam, made firm by hand, afforded water, and set aside for a time before inserting the cuttings, they will root under bell-glasses in a warm house. With proper attention in regard to potting and applying water, these will make sturdy, flowering plants in one year. When rooted in the first pots, shift into 60's, and place in a warm greenhouse, syringing them repeatedly in bright weather. Their next shift should be into 48's, employing turfy loam, leaf mould, and road grit. In June stand them on coal-ashes in a cold frame, and later draw off the lights till cold nights set in. The plant must be well supplied with moisture at the roots, and over head in hot weather; and occasionally soot-water and mild liquid manure may be applied.

GARDENIA FLORIDA, RADICANS, &c.

If old plants after flowering are pruned, shaken out of the exhausted soil in pans, and repotted, they will flower well the next year. But in order to keep up a healthy lot of Gardenias, plants should be struck in the autumn and winter seasons annually. In the absence of a propagating-pit, the cuttings may be struck in any hotbed having a temperature of 70°, and bottom-heat of 80°, or they may be struck in pots plunged in boxes filled with leaf-mould, and stood on hot-water pipes. H. Markham, Wrotham Park, Barnet.

ENQUIRIES.

VIOLETS DROOPING AND SCENTLESS.—A correspondent ("J.") would be pleased if some of our readers would kindly explain why frame-grown Violets droop very shortly after being gathered and put in water. Sometimes they wither in a few hours. Warm water has been used in the glasses, and a few drops of ammonia have been placed in the water; also the flowers and stalks altogether plunged in a basin of water for several hours before arranging them, but with no result. The blooms are large and plentiful.

CRONARTIUM RUBICOLA.—A Belgian correspondent asks whether this fungus, which passes part of its life on *Pinus Strobus*, and part on the Black Currant, is seriously injurious to the latter. He has no Weymouth Pines in the immediate neighbourhood. We have not heard of any serious damage from this fungus, but shall be glad of information (see *Gardeners' Chronicle*, 1892, pp. 41 and 135).

HOME CORRESPONDENCE.

THE FLEUR-DE-LYS.—In the *Gardeners' Chronicle* of January 4, 1902, p. 8, it is stated, regarding the heraldic emblem, usually called the "Fleur-de-Lys," that "unfortunately for this contention (i.e., that this emblem had the Iris for its parentage), it is not yet settled whether the device is really intended to represent an Iris, a Lily, or a spear-head!" There is one thing that would appear to be settled, viz., that it cannot represent any known flower. All "Fleur-de-Lys" have from one to three ligatures, that is say, one to three turns of a string. This feature is fatal to any contention that would derive it from a flower. That ever present feature would point that it is composed of two or four things tied to something, for there is no flower that has ligatures round its waist! It may be quite true that Clovis obtained this device from Palestine during the Crusades, and that it was first seen on the shield or banner of some Saracen chief. The probability, however, is that its parentage may be referred to a vulgar superstition, and that it has nothing to do with any kind of flower. In Oriental countries the belief is universal that horns of animals have the power of averting the evil influences of the "evil eye" from anything they may be attached to, so they are stuck on houses, trees, &c. The "Fleur-de-Lys" is probably no other than a degraded form of two pairs of horns tied to a stick. This superstition is very prevalent in the south of Europe, and may have been introduced there from the East, by either the Saracens, or those remarkable sea-faring traders, the Phoenicians. Anyhow, the probable origin of the "Fleur-de-Lys" can be seen on a large scale on the Sacred Tree of the Assyrians in the British Museum. See discussion on this subject in the *Flora of the Assyrian Monuments*, p. 131. E. Bonavia, M.D.

GARDENERS IN THE U.S.A.—My remarks upon America as a land of promise to the overcrowded horticulturists of England have been read with more interest than I anticipated, and I am deluged with correspondence on the subject. I shall be glad to give a general reply through your columns, by your kind permission, as it would be impossible for me to reply individually. Many wish to "take advantage of my offer to get them positions." I did not make such an offer. I am not in a position to do so; nor would the law here allow of anyone engaging them. Everyone must come out, and get the position afterward, taking some risk. In saying gardeners are scarce, I do not mean that lucrative head places are actually waiting for someone to take them, but that the opportunities are better, and competition less keen. I have been favoured with a letter from a leading nurseryman in this country, and one most qualified to judge, in which, commenting upon my previous letter to the *Gardeners' Chronicle*, he says:—"There is, as you say, a good field here for gardeners of the better class, and for under gardeners." The law of the land makes it necessary for everyone to fight his own battle, and one must be prepared to take the rough with the smooth, as witness my own experience. Coming from a place where I had all the privileges (and may I say "soft snaps") appertaining to the position of a head man with thirteen assistants, I found myself during the first weeks of my American experience laying turf, grubbing and replanting hedges, making paths, &c. I mention this, that no one should be led to try it by my advice, thinking the country an Eldorado, where dollars can be picked up in the streets. There is good money for good work—all a reasonable man can ask. To the many who have questioned me upon the subject, I may say the best time to come out is the end of March, ready to begin business in April. Outdoor work, retarded by frost, has then to be pushed forward rapidly, and nurserymen, landscape gardeners, and others, are very busy. The cost of the voyage is £8 second cabin (South-

ampton to New York), £6 steerage. In addition, one must have not less than 30 dols. to land with. It is necessary, not only for one's personal convenience, but for the satisfaction of the authorities here. The climate, which many enquire about, is such that any Briton should thrive in it—greater extremes of heat and cold, but nothing unpleasant; no special outfit is necessary. Wages vary, of course, but the casual worker obtains 8, 9, and 10 dols. per week, according to ability, out of which 4 to 5 dols. go for board and lodging, according to what district one is located in. Wages are highest around New York, and there the stranger would do well to look first for business, as, if unsuccessful, which in spring would not be likely, he could then come further on to New Jersey, and into Pennsylvania. Those interested solely in fruit farming should go further afield into Maine, or even to California. Where I am, it is a country place, with few chances of profitable employment, as compared with other places. In conclusion (although as a result of this correspondence a few may hear of something which may perhaps be to their advantage), I regret my inability to assist all in a practical way. I further regret that many sent stamped envelopes and stamps, which are useless here. My opinions, as expressed in this and my previous letter, are such as I have formed from only a slight knowledge of this vast land, and I, not desiring any credit for the success of any who may be led to try it through me, likewise as little desire to be blamed for any failure. Alfred Harding, Villa Nova, Pennsylvania.

THE ROYAL HORTICULTURAL SOCIETY.—It scarcely seems quite fair to the Superintendent of the Royal Horticultural Society's Gardens to compare its cultural and climatic advantages or disadvantages with those of other gardens in its immediate neighbourhood. The superintendents mentioned in the *Gardeners' Chronicle*, p. 44, all of them, it may be said, are in absolute power as to what they may do in their respective departments to bring about some act of cultural skill, or to create some new feature in the garden; some alterations which, according to their ideas, would be an agreeable surprise to their employers, who might, in all probability, know nothing of it, until some day on their home-coming they happened to see it. Such happy feeling under these circumstances between employer and employed makes life, even to a gardener, worth living for. Not so, however, with the Superintendent of the Royal Horticultural Society's gardens. His position is that of a very much handicapped man. It is not left to him to conceive some happy idea, the success of which he himself could foresee, and to at once carry the work out whilst the idea was fresh upon him. I believe I am right in supposing that in the first place the Superintendent must go to the Secretary, and he in turn to the Council, before sanction can be obtained; in this sort of circumlocution many a grand idea gets smothered ere it is born. We are told that nicely-coloured Alicante Grapes have been grown within three miles of Charing Cross. So also as good and better might be grown at Chiswick; but to produce sensational bunches, the borders of the once famous vinery would have to be renewed with a mechanical mixture of soil up-to-date in regard to its constituents, and young Vines planted. The history of Grape-cultivation in this country goes to show that grand bunches of Grapes are produced only at places where new vineries have been erected, or old ones thoroughly renovated and replanted, which will do quite as well. Our exhibition-tables show what a shifting business the successful cultivation of the Grape-vine is. An old hero disappears, a new Patroclus takes his place, only to be run down by a Hector, who in turn is bowled over by another aspiring Achilles; and so the Grape war goes on, prizes now here, and now there. Few gardeners have fought the battle of Grapes more successfully or more continuously than those at Eastnor and Elvaston Castles. But back to our text. That

the fertility of the soil in the Chiswick gardens is greatly exhausted is, I believe, admitted by all; but its renewal by a heavy dressing of turfy-loam is only a matter of £ s. d. But under the present circumstances would it be wise to spend money on the renovation of an old, worn-out garden, which is drifting year by year into such unfavourable local conditions which threaten, in a few more years, to render successful and satisfactory cultivation almost an impossibility? Rather we would say, look out for fairer fields and pastures new, where the soil is virgin, and the condition of the surrounding air everything that could be desired—anyhow, so far as it can be got in this country. But a truce to going too fast. We are pleased to hear that the Society's exchequer is now well filled, and its affairs in a healthy condition; that the two things for which we have for years been longing are now within measurable distance of realisation. One is the new Exhibition Hall, which everybody seems to be agreed should come first, and after that the new garden laid out in a locality where it will satisfy everybody! Keep on the old gardens until the new one is secured, then it may be parted with after removing from it everything thought worthy of removal. Commence in the new garden with a clean slate, under the guidance of the present indefatigable secretary. Supported by a wise and well-appointed Council, with such equipment, we should have a Society, and an experimental garden second to none. W. Miller, Berkswell.

POPULAR AND STERLING VARIETIES OF PEAS.—Under the above heading, on p. 32 of your issue of January 11 last, I read with interest, and also with some astonishment, the system on which Mr. Ward grew Peas when he was at Longford Castle. To quote his own words, he states that he trenched the ground "between 2 and 3 feet deep, and three layers, 6 inches thick each, of well-decayed horse-dung were incorporated with the soil in the process of trenching." Now, three layers 6 inches each equals 18 inches in depth of dung, and as he states that he prepared the soil for his "second early, mid-season, and late Peas" in this manner, he must have had to dung a considerable amount of ground. Taking my own case, that of a moderate-sized garden, a break something like 30 yards square would be required for the period mentioned by Mr. Ward, and to manure the soil to the extent he states would take the enormous quantity of 450 cubic yards or loads of manure, a quantity I should be glad of to manure the whole garden for three or four years, or longer. I have tried to understand if it was possible that this quantity could have been used, or whether Mr. Ward had made a slip of the pen; but if that were the case, there has been time to correct it, and we may take it that he so meant it. I think there are few gardeners who will attempt to follow Mr. Ward in his methods of Pea-growing so far as manuring is concerned, unless it be for experimental purposes, it being in most gardens impossible to obtain so much manure, even were it advisable to make use of it. My own experience is that such a large quantity of rotten manure is not required by Peas, and that about one-twentieth of the quantity Mr. Ward recommends is what we use here, and even that is a heavy dressing. Added to this are a sprinkling of wood-ashes and old mortar-rubbish, and a thin dressing of dissolved bones, these being incorporated with the soil during the trenching, which is done as Mr. Ward recommends, from 2 to 3 feet deep. The dung is used with a view to helping to retain the moisture in the soil, which, being of a gravelly and chalky nature, is very light and porous. On heavier soil, where there is more moisture, the results have been equally satisfactory as when no dung was applied. I have tried making up trenches on a limited scale with manure from the stables, and have had fair results, but nothing like so satisfactory as with the method I now employ. It is not claimed that my crops of Peas are as good or better than were Mr.

Ward's at Longford Castle, but they have been very satisfactory both as to quantity and quality. Having carefully watched of late years the effect of, or rather the ineffectiveness of, nitrogenous manures on Peas, I have come to the conclusion, that if they are of any benefit at all, it is in the form of farmyard or stable-dung on light soils which prove of use in conserving the moisture in the soil, thereby benefiting the Pea crops in dry weather; but I should not recommend a thickness of 18 inches. *James Gibson, Danesfield Gardens, Marlow, Bucks.*

PRIMULA MEGASEÆFOLIA, Boissier, is really a very fine species, and one of the best Primroses for winter-flowering purposes in greenhouses, cold frames, and probably also in rooms near the glass, when sufficient light is given. It is no doubt one of the richest flowering specimens, and will become a favourite with amateurs and gardeners. My garden is situated at an elevation of about 800 feet. I cultivate this Primrose in the open ground at the base of a shady wall in peat, loam, and leaf-mould, mixed with much silver-sand; the surface is covered richly with moss or dry Chestnut-leaves. There it grows very well, is evergreen, and flowers from September to May continually; only disturbed occasionally when the north-eastern wind sometimes injures it. It is freely watered in spring and summer, and I have found that it likes a short period of rest in the autumn. It seeds freely with me in the open ground, and it the seeds are sown immediately will germinate before the second spring or winter. They must be sown in very humid peat and sand. I also cultivate it with success in pots under glass during the winter, which here is never severe, keeping these plants during the summer in a shady and damp place near a wall, and never under trees or shrubs. These plants in pots do not flower much earlier than the others in the open ground, only their stalks are longer and more elegant, and the flowers appear to be a little larger, but are less finely coloured than the others in the open ground. The flowers are in a loose umbel of from ten to fifteen or more, and are mostly in a single umbel, more rarely in two, and very seldom in three. They are of a very fine red-purple colour; later ones are paler, changing to lilac, and certainly capable of producing, under good cultivation, much better forms. I have two very fine varieties not yet multiplied. It is widely diffused from the Caucasus to Persia and Afghanistan, but is not easily discovered, and never common; but where it is found it grows profusely, as it spreads by means of small thready suckers. The rootstock is somewhat thick, and can be kept six months and more without earth in quite a dry state. In this state only was I able to introduce it from a locality in Persia some years ago. Boissier saw it only, as it seems, in a locality near Rizeh, and also from this locality I have received a good stock which is quite identical with my Persian plants. That is all we know so far of this lovely and sweet Primrose, which to-day is in my garden in its glory, together with the fine Iris Heldreichi or tauri, both sent me some years ago from Mersina by Mr. Siehe. The purple Primroses with golden eyes, and the bright blue Iris Heldreichi are very happy, and form a fine contrast. *W. Sprenger, Vomero, Naples.*

MUSSEL-SCALE ON APPLE-TREES.—I should like to add one other remedy to your correspondent in "The Hardy Fruit Garden," and it is a very simple but a most effectual one, viz., mix 1 oz. of paraffin-soap to each gallon of water—see that the soap is thoroughly dissolved, and syringe the trees affected on evenings when sharp frost is expected, or while it is freezing; the sharper the frost the more effective will the remedy prove. I have cleaned many trees, both of Apples and Pears, in this way of this destructive insect. When the trees are badly coated by this scale, it may be found necessary to repeat the syringing several times, but it will undoubtedly clean the trees. Not only is it a good way of freeing

trees of this scale, but from every kind of insect, and their eggs and larvae. Of course, the object is to envelop the insects, &c., in ice, which will be the case on sharp frosty nights. I have followed this practice for some time, and I am well satisfied with results; it thoroughly cleanses the bark of vegetable growth as well as insect life. Of course, no one would think of doing this after the buds show signs of bursting, and therefore the sooner it is done the better. *T. Arnold, gr., Cirencester House, Gloucestershire.*

THE SQUIRREL received a large amount of attention at the meeting of the Royal Scottish Arboricultural Society on January 31, and the statements of Mr. Speedy as noted in the *Gardeners' Chronicle* of January 25 were largely corroborated. Mr. McHattie, of the City Gardens, Edinburgh, was the only speaker who declared largely in its favour, thinking it had not increased of late years, and that it would be a pity to exterminate it. Mr. Clark, Haddo House, advised the employment of bands of boys to beat woods for the agile creatures, every one that could be found to be shot. Lord Mansfield no doubt was correct in



THE LATE DR. STUART.

attributing the difficulty of rooting out squirrels to the sentimental feelings of ladies for the agile little quadruped. If we are to credit Lightfoot, and he was a careful observer, squirrels were very scarce in Scotland in 1772, when he itinerated the country along with Pennant, Strathspey being the only district where they were plentiful. Fifty years ago they were somewhat of a curiosity in lowland Scotland, and in some districts in the south-west they are still uncommon. *R.*

BAMBOOS.—Re Mr. Freeman Mitford and the "hardy Bamboos," see p. 13 of that interesting book *The Bamboo Garden*, where it is stated that it is only from the two or three knots at the base of the stem that a new growth proceeds; this, however, fails to cover the whole ground. Experience has shown me that the bunches of shoots which are produced from the upper joints of the two-year culm, if taken off when ripe, and placed in a suitable moist and warm atmosphere, root from the base of the mass of young shoots, resulting in a few months in a stock of nice little bushes. I am speaking in particular of the true *Arundinaria falcata*, as defined by Mr. Freeman Mitford; also of *Thamnoclamus Faleoneri*. I should judge, from observation of these plants, that in a sufficiently moist climate the

tufts of small shoots, by the bending over of the culms, reach the soil, and there root, as is the case with a number of other plants known to the gardener. *E. Tidmarsh, Grahamstown.*

DISEASE IN TOMATOS AND CUCUMBERS.—I notice in your "Answers to Correspondents" on February 15, the one with reference to the disease in Tomato-plants, an enquiry that I suppose will frequently appear in the *Gardeners' Chronicle* throughout the season. I am of the opinion that a great deal might be accomplished by a more careful method of seed saving of Tomatos and Cucumbers. In many instances cultivators save seeds year after year, from plants grown in a high temperature and highly manured, which certainly must tend to weaken the constitution of the plants, and make them more susceptible to disease. If sufficient plants of each to provide seed for the next season were grown under cooler treatment, and not manured. If any extra nutriment was required it might take the form of top-dressing with good virgin soil, I think that plants raised from seed saved in this manner would be stronger, and better able to resist disease. A correspondence on this subject would no doubt be of great service to a good many of your readers, as a failure in either of these crops is a serious matter to market gardeners in these days of severe competition and low returns. *E. B., Worthing.*

Obituary.

DR. CHARLES STUART.—The death of Dr. Charles Stuart, Chirnside, Berwickshire, was announced in the daily papers of the 14th inst. By his death the North of England loses one of its oldest and most successful florists. Dr. Stuart's age was not mentioned, but seeing that he and Mr. James Dobbie, of Rothsay—who survives—were competitors at a Pansy Show held at Berwick-on-Tweed in 1846, Dr. Stuart must have reached an advanced age. The Pansy was at that time a very popular florists' flower both north and south, and not a few of the most successful florists of thirty years ago commenced the culture of flowers by taking the Pansy in hand. Nor were hardy flowers generally overlooked by Dr. Stuart: he devoted his time to the improvement of several, and to his enterprise we owe *Aquilegia Stuarti*, a beautiful dwarf blue-flowered form, but which is found somewhat difficult of cultivation. The Polyanthus was also one of his special favourites, and he was highly successful in improving the Gold-laced Polyanthus, naming two or three varieties of great merit, which it is to be hoped will not be lost to cultivation, as it is a section which greatly needs strengthening. While travelling in Ireland some years ago, he discovered at Ballinora, Connemara, a new variety of hardy heath, which was named *Erica Tetralix Stuarti* in his honour.

It was his valuable and far-reaching work in improving the Viola which most called for the admiration of contemporary florists. Mr. Wm. Cuthbertson, Rothsay, has kindly placed at my disposal a memorandum compiled by Dr. Stuart, in which he sets forth details of his preparatory work. In 1874 he commenced by taking pollen from a then popular bedding Pansy, Blue King, and with it fertilised *Viola cornuta*. He obtained one pod of seed which, when sown, produced twelve plants. They flowered the next season, and were, as might have been expected, all blue in colour, and each with a close, tufted habit of growth. The next step was to cross a pink-flowered Pansy on to the seedlings obtained from the first cross, but with limited success. Such plants as were raised afforded more variety in colour, and the same tufted habit of growth was continued. The

best of this cross were propagated, and some of them were sent to the Chiswick Gardens of the Royal Horticultural Society to afford a test in a southern climate. Dr. Stuart at the same time issuing an invitation to all who were then raising *Violas* to send their flowers, so that there might be as complete a trial as possible.

Dr. Stuart states that in "the autumn of 1875 I was informed that I had got six First-class Certificates, and was 1st in the competition, Messrs. Dickson & Co., Edinburgh (whose manager, Mr. James Grieve, had been at work some time previously in the same direction), being 2nd. I find, on referring to the record of awards made by the Floral Committee in 1875, that one Certificate only was awarded to Dr. Stuart, and that for a variety named Williams; but three or four in 1876. At this time it was suggested to Dr. Stuart that he should endeavour to obtain a variety without rays round the eye, and he set himself to work to accomplish this end; but it was ten years before he succeeded in finding a really rayless *Viola*. This was in the year of the Queen's Jubilee. The plant was propagated; the next season he had a little plantation of it; it was of compact, tufted growth, and the blossoms emitted a powerful fragrance. This was the origin of the variety *Violetta*: by crossing this on to a white self with few rays, *Sylvia* was obtained; and *Sylvia*, crossed with a Peacock Pansy produced *Border Witch*, "a singular flower which, in its best dress in moist weather, is very striking." Many disappointments with his crossings were experienced by Dr. Stuart, for he relates that though he had crossed specially with a view to the production of rayless varieties, out of 150 seedlings *Border Witch* was the only one without rays. From that time forth, Dr. Stuart raised many fine varieties which came into cultivation. He always aimed at refinement, a close, tufted habit of growth, freedom and constancy in bloom, and fragrance. In a letter written in 1898 Dr. Stuart remarks:—"In crossing any wild species or varieties of *Violas*, it is necessary that the pollen should be taken from the cultivated species and dusted over the pistil of the wild one. Pollen taken from *V. cornuta*, for instance, will, if put on to a common garden Pansy, only give seed which will produce bedding Pansies, and not the sturdy, tufted strain *Violetta* represents." R. D.

JAMES HILL.—We regret to record the death, at the age of eighty years, of Mr. James Hill, florist and nurseryman, of Barrowfield Nursery, Lower Edmonton, which took place on Sunday, February 16, after a long and painful illness. Mr. Hill established the Barrowfield Nursery in 1848, and the business was carried on in recent years under the title of James Hill & Son. The specialty of the firm is exotic Ferns, of which very well cultivated exhibits are occasionally to be seen at the meetings of the Royal Horticultural Society.

HENRY TATE.—Readers of this journal in Liverpool and the country generally will learn with regret of the death of Mr. Henry Tate, formerly of Allerton Beeches, Liverpool, at his residence, Bolney House, Ennismore Gardens, London, at the early age of forty-eight years. Whilst residing at Allerton Beeches, the deceased gentleman made Orchids his hobby. The collection was not extensive, but the cultivation of the plants was very superior; moreover, many choice varieties have originated there. The collection of seedling *Cypripediums* and *Cattleyas* disposed of at the Allerton Beeches' sale contained many fine crosses and hybrids.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

FEBRUARY 11.—Present: H. J. Veitch, Esq., in the Chair; Messrs. Hooper, Gordon, O'Brien, Chapman, Holmes, Douglas, Worsdell, Saunders, Bowles; Rev. W. Wilks; Drs. Cooke, Rendle, and Masters were present.

Pony Roots.—The identification of the Caterpillar affecting these roots as that of the Swift moth (*Hepialus*) was confirmed.

Bananas in the Canary Islands.—A Fellow made enquiries as to the best kind of manure to be used for these plants at a reasonable price, the usual substances recommended being too costly for commercial purposes.

Pelargoniums in the Transvaal.—A correspondent sent leaves of *Pelargonium*, which were referred to Mr. Massee, who has since reported as follows:—

"The fungus on *Pelargonium* leaves is the African species of 'Geranium leaf-rust,' *Puccinia granularis*, K. and C. Diseased plants should be isolated, and the diseased leaves removed as quickly as the health of the plant will allow. Spraying with Condy's Fluid would prevent healthy plants from becoming infected. The fungus is not uncommon on wild species of *Pelargonium* in S. Africa, and has probably passed from such wild plants to the cultivated ones. The fungus is a very interesting species not previously known as attacking cultivated plants. Care will have to be taken that it is not imported into Europe."

Carnation Leaves.—Some diseased and distorted leaves, from a gentleman at Thames Ditton, were referred to Dr. Cooke for examination and report.

Potato Disease.—Some specimens of diseased Potatoes were sent from the Chippenham Horticultural Society. They presented in the interior of the tuber black spots, such as were investigated at Chiswick by Dr. Plowright and others several years ago, and figured in the *Gardeners' Chronicle*, Dec. 20, 1884, p. 788, fig. 135. The specimens were placed in the hands of Dr. Cooke for examination and report.

Unhealthy Fern.—Mr. GORDON showed, from a correspondent, fronds of a Fern in a sickly distorted condition, attributed by the Committee to defective cultivation.

"Buddha's Fingers."—Mr. HOLMES showed a specimen of a malformation in a Citron, consisting of a dissociation of the carpels, which thus resembled so many fingers.

Proliferation of a Rose.—Mr. WORSDELL showed a good illustration of this frequent malformation.

Anemone nemorosa.—Mr. WORSDELL also showed specimens of this plant, in which the radical leaves were as long as the bracts of the involucre.

Diseased Begonias.—From Mr. A. DEWAR came leaves of *Begonia Gloire de Lorraine* in a diseased condition. The leaves were infested with thrips and mites. Fumigation or spraying with tobacco-water was recommended.

Air-canals in the leaf and in the flower-stalks of Nymphaeas.—Dr. MASTERS showed impressions illustrative of the varying arrangements of the air-canals in the petioles and peduncles of several species and varieties of this genus—arrangements which are sufficiently varied and sufficiently distinct to allow of the grouping of the several species and varieties into certain well defined groups. The subject had attracted the attention of the speaker many years ago, but the recent introduction of M. Latour Marillac's hybrids suggested a further examination, which was confirmatory of previous observations, and the results of which are detailed in the communication now laid before the Society. For the opportunity of examining numerous specimens, Dr. Masters expressed his great obligations to Mr. Hudson, the expert cultivator of these beautiful plants at Gunnersbury House.

LINNEAN.

FEBRUARY 6.—Professor S. H. VINES, F.R.S., President, in the Chair.

Professor REYNOLDS GREEN, F.R.S., F.L.S., exhibited some Primroses which showed the not uncommon phenomenon of sepaloid of the petals. The corolla was green and the limbs of the petals were rugose, and of a texture almost comparable with that of the foliage-leaves. He also showed another specimen in which the calyx as well as the corolla was petaloid. Both

specimens were received from a garden in the north of England.

Messrs. H. and J. GROVES, F.L.S., exhibited a series of British hybrid *Batrachian Ranunculi*, including *R. peltatus* × *Lenormandi* (R. Hilltoni, H. & J. Groves), *R. Baudotii* × *Drouetii*, *R. Baudotii* × *heterophyllus*, and *R. peltatus* × *trichophyllus*, together with specimens of their supposed parents. They pointed out that the hybrids were usually characterised by (1) being intermediate in appearance between the two parents, having some of the distinctive characters of each, but with a more vigorous vegetative growth; and (2) by the fruit being mostly abortive, and the peduncles not becoming recurved.

Mr. FRANCIS DARWIN, F.R.S., F.L.S., read a paper on "A Method of investigating the Gravitational Sensitiveness of the Root-tip," showing the apparatus used, and lantern-slides of seedlings under experiment. Confining himself to the modern development of the question, the author remarked that the observations of Czapek and of Pfeffer having been contradicted by Wachtel, it had become desirable to confirm these observations by employing a different method. The apparatus used consisted of a counterbalanced lever 53 cm. long, able to turn in any direction by being mounted on a knife-edge. Seedlings of the Bean and the Pea were employed, and glass tubes, straws, and Dandelion-scapes were in turn used to contain the root-tip, and by the aid of certain mechanical appliances, to prevent the root slipping out of the tube. The tip being fixed, the remaining part of the root and the hypocotyl (caulicle) became curved in varying degrees, due to the stimulation of the root-tip. The result has been confirmation of the observations made both by Czapek and by Pfeffer.

Dr. D. H. SCOTT, F.R.S., F.L.S., gave an account (illustrated by lantern-slides) of "An extinct Family of Ferns"—the *Botryopteridae*, our knowledge of which is primarily due to the researches of M. Renault. The vegetative organs and sporangia of the type-genus *Botryopteris* were described, and two British Palaeozoic species, *B. hirsuta*, Will., and *B. ramosa*, Will., were added to the genus on the ground of their anatomical structure. The genus *Zygopteris*, also known with some degree of completeness, was next dealt with, and the structure of the British species *Z. Grayi*, Will., described in some detail. Reasons were given for including other genera, such as *Anachoropteris*, *Asterochlæna*, and *Tubicaulis* in the family, while a close connection with *Diplolabis* and *Coryopteris* was also regarded as probable. The affinities of the group were discussed in conclusion, points of agreement with *Hymenophyllaceæ*, *Osmundaceæ*, *Ophioglossaceæ*, and other families of Ferns being pointed out. Heterospory, believed by M. Renault to exist in *Botryopteris* and *Zygopteris*, was not regarded as established, and affinities were sought rather among homosporous Filices.

ROYAL GARDENERS' ORPHAN FUND.

ANNUAL MEETING.

FEBRUARY 14.—The annual General Meeting of the supporters of this charitable Fund was held on the above date in the Essex Hall, Essex Street, Strand, W.C. The attendance was only moderate, not more than thirty gentlemen being present.

Mr. H. B. MAY, chairman of the Executive Committee, presided.

THE ANNUAL REPORT.

"In presenting their fourteenth annual report, the Executive Committee once more congratulates the supporters of the Fund upon its continued prosperity and usefulness, as, although unfortunately, in common with many other charitable institutions, the total receipts for the year show a slight falling off, the Committee have been enabled to meet all claims upon the Fund, and to expend in regular allowances to orphans duly elected to receive the same, an increase on the disbursements of the previous year, as well as to expend a larger amount in the form of grants in aid, the total amount disbursed being £1,099 17s. 6d., or an excess of £66 5s. over any previous year.

The Committee has the greatest satisfaction in making the announcement that Her Most Gracious Majesty Queen Alexandra has kindly consented to continue to the Fund the patronage which Her Majesty previously accorded to it as Princess of Wales.

By the generosity of the subscribers attending the last annual general meeting, when, as in the previous year, all the candidates were elected, the Committee were placed in the gratifying position of being able to commence the new century, and the first year of the reign of His Majesty King Edward VII., without any candidates waiting election.

With regard to the grants in aid, the Committee feel certain that in this beneficent branch of the fund's operations, they will have the sympathetic support of all subscribers in the good work that is being done in helping to give a useful start in life to those poor orphans, who, by virtue of the age limit, cease to receive regular assistance, by helping to lengthen the period of schooling in some cases, and by the provision of

clothing and tools in others; while candidates awaiting election are frequently assisted by means of allowance of 2s. 6d. per week.

The number of orphans who have been elected to receive the benefits of the Fund during the past thirteen years is 143, and the total amount expended in allowances during the same period is £9,844 12s. 6d. The number now on the Fund is seventy-five, and twelve will be added this day.

The Committee still deplore the fact that there are many gardening centres in the country from which the Fund receives little or no support; while, on the other hand, the efforts made by good friends and fellow-workers in such districts as Altrincham, Bournemouth, Bradford, Bristol, Chesterfield, Chislehurst, Reigate, Richmond, Rugby, Sevenoaks, Wimbledon, &c. (who, by means of local collections, concerts, and the sale of surplus flowers at exhibitions, annually raise amounts which greatly assist the Fund), are gratefully acknowledged by the Committee.

The Annual Festival, held at the Hotel Cecil on May 7, under the presidency of the Hon. W. F. D. Smith, M.P., proved to be one of the most successful of the series, and the Committee has the gratifying fact to record that the earnest and sympathetic appeal made by the chairman on that occasion resulted in a subscription list amounting to £848 17s. 1d. Most gratefully do the Committee acknowledge the great service rendered to the Institution by the Hon. W. F. D. Smith, and they have the greatest pleasure in recommending that he be this day elected a Vice-President of the Fund.

It is with the liveliest satisfaction that the Committee make the announcement that Leopold de Rothschild, Esq., has most kindly consented to preside at the next Festival, which will take place at the Hotel Cecil on Thursday, May 8th, and they trust that all friends of the Charity will assist them in making the presidency of this princely patron of Horticulture, in Coronation Year, a memorable one in the annals of the Fund.

In the month of May, a favourable opportunity offering, your Committee made an addition to the invested funds by the purchase of £514 Great Indian Peninsular Railway guaranteed 3 per cent. stock, at a cost of £499 18s. 8d.

With deep regret the Committee has to record the death of Mr. Alfred H. Smee, who, on the establishment of the Fund, readily gave his consent to act as one of the Trustees, and subsequently not only assisted the Institution with generous financial support, but also most readily afforded the management the benefit of his ripe financial experience in dealing with the Fund's investments. In life warmly interested in the success of the Fund, Mr. Smee did not forget the poor orphans in death, having bequeathed to the Institution £250 free of legacy duty.

Other valued supporters have also passed away in the persons of Sir Edwin Saunders, one of the Vice-Presidents; Mr. Martin Hope Sutton, Mr. D. T. Fish, Mr. A. Henderson, and Mr. Thomas Rochford. In the early days of the Institution, Mr. Fish was most strenuous in his efforts to gain support for the Fund, and helped materially to establish it on a sound financial basis; while by the lamented death of Mr. Rochford, the Fund has lost the open-handed and most sympathetic support of one of the most kindly natured of men, and British horticulture one of its most enterprising and skilful exponents.

The Committee have pleasure in recommending that Mr. Leonard G. Sutton, of Reading, be elected a trustee in the place of the late Mr. Smee.

The members of the Committee who retire by rotation are Messrs. W. R. Alderson, A. F. Barron, G. Cuthbert, W. Howe, J. Lyne, C. E. Osman, W. Poupert, and J. Walker; and Messrs. Alderson, Cuthbert, Howe, Lyne, and Poupert, being eligible, offer themselves for re-election. Mr. George H. Barr, King Street, Covent Garden; Mr. T. W. Sanders, Lewisham; and Mr. G. Nicholson, Richmond, are nominated by the Committee for election to the seats vacated by the retirement of Messrs. Barron, Osman, and Walker.

By the retirement of Mr. Barron, on account of continued ill-health, which all who know him deeply deplore, the Committee desire not only to assure him of their warmest sympathy and best wishes for his restoration to health, but also to place on record their high appreciation of the invaluable services which he rendered to the Fund at its foundation, and subsequently as its Secretary, and their sense of the loss which it sustains by his retirement from active participation in its management.

The Committee, keenly sympathising with Mr. Sherwood in his recent severe illness, and heartily hoping that he may be speedily restored to health, again most warmly acknowledges the great personal interest which, as Treasurer, he has taken in the management of the Fund, and the munificent financial support which he has continued to accord to it. Mr. Sherwood's re-election this day, the Committee feels assured, will afford the highest gratification to all well-wishers of the Fund.

To the Auditors, Mr. Martin Rowan and Mr. P. Rudolph Barr, the Committee also tender hearty thanks for their valued services in auditing the accounts—a labour of love, most conscientiously carried out. Mr. Rowan is the retiring Auditor, and is nominated by the Committee for re-election.

STATEMENT OF ACCOUNTS.

The receipts from general and local secretaries subscriptions were £340 7s. 3d., and from donations £161 13s. 6d. The annual dinner receipts were £648 17s. 1d.; dividends on stock and interest on deposits £302 4s. 8d. The total receipts, including a balance in hand of £1,173 4s. 3d., were £2,683 10s. 5d. On the expenditure side, allowances to orphans amounted to £1,028 10s., Emma Sherwood Memorial £13, and grants in aid £58 7s. 6d. The expenses of the annual dinner were £162 17s. 4d. (there being thus nearly £500 profit upon the event). Secretary's salary £100, various other items show an expenditure of £92 2s. 2d.; the purchase of £514 of Stock cost £499 18s. 8d., and there are balances at bank, on deposit, and in hand of £2,683 10s. 5d.

PROCEEDINGS.

The Chairman, in moving the adoption of the report and balance-sheet, said the year had been a singularly uneventful one. He said that the falling off in receipts was more apparent than real, as subscribers were apt to forget dates, and some subscriptions that should have appeared in this year's account would do so in the next. After the Chairman had referred to other features of the report, Sir J. T. D. Llewelyn, Bart., seconded its adoption, saying that the Fund was doing better work than ever. He hoped the number of subscribers would be lengthened and strengthened. The report was adopted unanimously.

On the proposition of Mr. W. Bates, the Hon. W. F. D. Smith was elected a Vice-President. On the proposition of Dr. M. T. Masters, seconded by Mr. Harry J. Veitch, Mr. Leonard G. Sutton was elected a trustee in the place of the late Mr. Smee.

The personnel of the Committee was then altered as suggested in the above report, and the retiring members were thanked for the services they have rendered.

Mr. A. Dean thought that the least the Committee could have done was to have suggested that Mr. A. F. Barron be elected a Vice-President; however, as explained by the Chairman and Mr. Assbee, it was thought that the proposal should be made by the members rather than by the Committee. Mr. Barron was thereupon unanimously declared a Vice-President.

Mr. Brian Wynne was unanimously re-elected Secretary, and the Chairman testified to the efficient manner in which Mr. Wynne had discharged the duties of the office.

CHILDREN ELECTED TO THE FUND

Messrs. George Cuthbert, William Cuthbert, J. F. McLeod, and H. J. Jones, were appointed scrutineers of the Ballot. At half-past four the Chairman declared the result as follows:—Frederick John Nicholls, 284 votes; H. H. Orchard, 236; Edith Martha Bevis, 232; F. E. Tickner, 222; E. D. Seydewitz, 218; E. M. Seydewitz, 213; Hugh Allee, 208; J. A. C. Robertson, 205; H. R. Tickner, 204; J. A. Wakelin, 191; H. Robertson, 185; M. M. de Gruchy, 167; W. Gregg, 107; Williamina Hendry, 47; Lilian M. Francis, 35; and Evelyn P. Cherry, 30. The Chairman then declared the twelve children first-named duly elected.

THE FRIENDLY SUPPER

took place in the evening, at the Cannon Street Hotel, Mr. R. B. May presiding; Mr. J. F. McLeod and Mr. Assbee filled the Vice-Chairs.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

FEBRUARY 6.—W. THOMPSON, Esq., Stone (gr., Mr. Stevens), staged a few nice *Odontoglossums*, *O. crispum* var. Jubilee receiving a First-class Certificate and a Cultural Certificate. The group contained also a number of panfuls of well-grown *Sophranitis grandiflora*. A Bronze Medal was awarded.

From the garden of the late Mrs. BRIGGS-BURY, Accrington (gr., Mr. Wilkinson), came *Cypripedium aureum* var. *Pomona*—an Award of Merit; C. x *Lilian Greenwood*, a very fine form, received a First-class Certificate; C. x *Beeckmanni* came from the same collection.

O. O. WHIGLEY, Esq., Bury (gr., Mr. Rogers), staged a fine lot of *Cypripediums* again. A fine plant of *C. Lathamianum*, in a 6-inch pot, and bearing fourteen flowers, received a Cultural Certificate. A Silver Medal was awarded for the group.

Mrs. S. GRATRIX, Whalley Range (gr., Mr. Cypher), exhibited *Lycaste* x *Baller*, which has been previously certificated by the Society.

Messrs. CHARLESWORTH & Co., Bradford, sent a magnificent hybrid *Lycaste*, of a deep purplish-rose colour, with dark crimson lip, named *Lycaste* x *Charlesworthi*, undoubtedly the best variety yet observed in this genus. The committee were unanimous in awarding a First-class Certificate.

Mr. J. CYPHER, Cheltenham, staged a group of plants consisting of good forms of various *Dendrobiums*, all good examples of careful cultivation; *Dendrobium* x *Ainsworthi* "Cypher's var." was one noted amongst

them, the flowers of a rich shade of colour, and of large size; *Lycaste Skinneri* var. *alba* was also well shown (a Bronze Medal).

Messrs. F. SANDER & SONS, St. Albans, received a First-class Certificate for *Cattleya Trianci* "Our King," a fine, handsome, richly-coloured flower, with flaked petals and a rich lip; the spike bore four of these flowers. P. W.

EALING HORTICULTURAL.

FEBRUARY 17.—The thirty-seventh annual meeting of this Society was held on the above date in the Town Hall, Mr. R. Willey, one of the Vice-Presidents, presiding. The annual report of the Committee expressed regret that the summer show held in the new Walpole Park was not so financially successful as could have been desired, owing to the incidence of the weather. The exhibition was a good one, and the special prizes for table decorations was the means of bringing out some charming designs. There was an excellent show in November, but a small attendance, owing to the dense fog which prevailed. The financial statement showed a balance in favour of income over expenditure of £31. Leopold de Rothschild, Esq., was re-elected President; the Vice-Presidents were re-elected, with the addition of the Mayor; and the officers were re-elected. A motion that the show on July 9 next should be held in Corporation Walpole Park, was met by an amendment that the President be approached for permission to hold the show in Gunnersbury Park. This was carried by a considerable majority. It was resolved that an autumn show of *Chrysanthemums* be held in the Town Hall on Wednesday, November 12.

DEVON AND EXETER GARDENERS'.

"GARDENS and Gardening on the Continent, as compared with England," was the title of the paper read at the last meeting of the Association by Mr. Percy A. Meyer, who had spent five years in continental nurseries, and at the Horticultural College of Proskau, Silesia, and is now an assistant at Kew. The observations, remarked Mr. Meyer, did not apply to the Continent generally, but to Germany and Switzerland. In comparison as regards climate, with all its faults, the English climate was more kindly, and many of our common shrubs, like *Hollies*, *Laurels*, *Aucubas*, and *Rhododendrons*, could, in some districts, only be grown out-of-doors in sheltered positions in Germany, and generally required the protection of straw or fir branches in the winter months. Evergreen *Euonymus*, *Portugal* and common *Laurels*, &c., were generally grown in tubs, which were put under cover from the end of October to the end of February, and later. Roses and wall fruit-trees have to be carefully protected from the frosts which, as a rule, prevail during most of the winter, and at times are very severe. Rockwork plants are covered with leaves and fir-branches pegged down on the top of them, spring-flowering bulbs being similarly treated. *Clethra*, *Ceanothus*, *Genista*, *Deutzia*, Japanese *Maples*, and *Honeysuckles*, all require protection. At the end of April in Germany the season is no further advanced than at the beginning of that month in England, but things soon forge ahead after that; and when a few weeks have passed, vegetation is in a more forward state than in this country. The temperature in summer reaches and maintains a higher standard than with us, and as regards Germany, that is why the saving of flower-seeds is so successful in the Erfurt, Quedlinburg, and other districts where the leading seed-growers have their headquarters.

In the north of Germany the land is light and sandy, and the country very flat. In the south, the country is more hilly, and the soil heavier. In the valleys of Switzerland, fruit-crops are abundant, and fruit is cheap. The love of gardening is more general in Germany than in England, but there is the rather curious fact to be noted that while a German owner will spend less on the making or laying out of a garden, and do more afterwards to maintain and improve it, the English owner is often more lavish in his initial expenditure, and niggardly afterwards in keeping it up. In the public gardens and nurseries, and in large private gardens in Germany, a marked distinction is made between the professional gardener and the garden-labourer. A three years' apprenticeship is imperative before a young man is accepted as a gardener proper and to become a foreman it is incumbent upon him to have served a term at some horticultural college, of which there are plenty in the country. He must be theoretical as well as practical. Women are employed to a considerable extent in gardening at wages running from 1s. to 1s. 6d. per day. Male garden-labourers get 2s. to 3s. per day. Gardeners do not get much more than labourers, although head gardeners and foremen generally have free cottages and a monthly wage. Some of the nurseries are very extensive, one near Berlin covering about 600 acres devoted to the cultivation of ornamental trees, shrubs, and fruit-trees. A

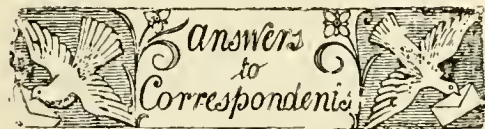
curious feature in such a nursery is that the packers, numbering between twenty and thirty, are paid by piece-work. The entire staff numbers about 400, of which about 100 are women. The Germans are far behind the English in fruit-forcing, and Grapes, Peaches, and similar fruits grown under glass in Germany are much inferior to the same class of fruit as grown in England. Nor is the cultivation of flowers under glass, particularly Orchids, so well done in Germany as it is in England. The public gardens of Germany are, on the whole, more tastefully laid out and better looked after than corresponding gardens in England. Private gardens in Germany are neither so numerous, extensive, or so well equipped as those in England. The plan of laying-out is on the model of the public gardens in most cases. Nearly every large city in Germany has its botanic garden, those of Berlin, Hamburg, Dresden, and Karlsruhe being excellent. Mr. Meyer gave some interesting details of the practice in Germany of budding, grafting, and the various methods of propagation, as practised in that country. *A. Hope.*

READING & DISTRICT GARDENERS' MUTUAL IMPROVEMENT.

FEBRUARY 10.—The fortnightly meeting of the above Association, held in the Abbey Hall, on the above date, was presided over by Mr. Leonard Sutton, the President, and was attended by nearly 130 members, one of the largest attendances yet recorded. The subject for the evening was "Salient Points of Fruit Culture," and was introduced in an exceedingly practical manner by Mr. E. Molyneux, of Swanmore Park, Bishops Waltham, his demonstrations in the art of root and branch pruning, staking, &c., making his lecture easy to follow, even by the youngest members present.

The exhibits were of fine quality for the season of the year, consisting of Apples, from Mr. J. BISSEY, gr., Beenhall Grange; and Mr. F. FRY, gr., Greenlands, Reading.

MR. ROBERT NEWSTEAD. — A crowded audience filled the Lecture Theatre at the Grosvenor Museum, Chester, on the occasion of a presentation to Mr. R. NEWSTEAD, a fuller notice of which will be taken in our next issue.



ARUM CORNUTUM: *J. R.* We know of no such plant; but there is no difficulty about the cultivation of Arums, either tender or hardy, given a rich soil, and a rest without drying off completely, in the case of those grown in pots, when the foliage has died down.

ASPIDISTRA GETTING SPOTTED AND TURNING YELLOW: *Mrs. Swanton.* A fungus is the probable cause. Can you send a diseased leaf for examination? The plant should be rested during the winter by being set in a cool place, not necessarily in full daylight, and the soil kept slightly moist. The flowers rise only just through the surface of the soil, and being dull purple in colour, cannot be mistaken for new leaves. The plant should not begin to make new growth till April.

BOOKS: *F. H. P.* *The Forcing Garden*, by Samuel Wood. Published by Crosby Lockwood & Co., Stationers' Hall Court, Ludgate Hill, E.C.; or get some of the special manuals sold by Mr. Upcott Gill, 170, Strand, W.C. — *A. F.* *Select Ferns and Lycopods*, by B. S. Williams. Sold at the Victoria Nurseries, Upper Holloway, London, N. *The Dictionary of Gardening*, by G. Nicholson and others. Published by Upcott Gill, 170, Strand, London, W.C. — *D. B.* At the *Journal of Horticulture* Office, 12, Mitre Court Chambers, Fleet Street, London. Price 1s.

CATERPILLAR IN POPLAR-TREES: *E. G.* The larvæ of the Goat-moth. Kill them by thrusting a piece of wire into the holes made in the stems.

CUCUMBER DYING OFF IN THE FIRST ROUGH-LEAF STAGE: *H. Woodthorpe.* The soil sent is of a very unsuitable kind, is heavy and retentive, instead of being light, porous, and moderately rich. Young plants are very

liable to "go off" from any excess of moisture when planted in soil of the nature of that sent. The plant had the appearance of having been grown in a but little ventilated frame.

DENDROBIUM HILDEBRANDI: *M. R. M.* The species is considered easy to grow and flower when treated as *D. nobile*. Probably if you rest them in a cool, airyinery or greenhouse after the growths are fully completed, you will flower them more satisfactorily; or if you place some of them in Orchid-baskets, and suspend them, that may answer the purpose.

DRESSING FOR TREE STEMS AS A PROTECTION AGAINST RABBITS: *J. S. H.* Make a thick paint of clay, cowdung, and lime and water, and to this add spirits of tar, in the proportion of two wineglasses to an ordinary pailful. With this the stems may be smeared 4 feet high. N. Ahlborn, 21, St. Andrew Square, Edinburgh, sells a tree protective composition that is highly spoken of.

FELLOW OF ROYAL HORTICULTURAL SOCIETY: *A. F.* If you apply to the Secretary, Rev. W. Wilks, 117, Victoria Street, Westminster, the necessary information will be sent you.

GREENHEART: *Prof. C.* Apply to Messrs. J. Lenanton & Sons, 9, Gracechurch Street, London; or to Messrs. Denny, Mott & Dickson, 165, Fenchurch Street, London, E.C.

NAME OF FRUIT: *R. C.* Catillae, a stewing Pear.

NAMES OF PLANTS: *R. E.* 1, *Cattleya Percivaliana*; 2, *Odontoglossum gloriosum*, which some include in the forms of *O. odoratum*; 3, *Goodyera discolor*, figured as such in the *Botanical Magazine* 46, t. 2055, but now known as the typical *Hemaria discolor*. In cultivation it is classed with the *Anacochili*, respecting which articles have appeared in the *Gardeners' Chronicle*, and others will follow. — *R. C.* *Graptophyllum hortense*; more often called *G. pictum* in gardens. It is known as the Caricature-plant; by shutting off certain sections of the colouring on the midrib, the most singular faces can be made out. — *J. H.* *Cypripedium insignis*, *Polypodium aureum* (not an *Adiantum*), and *Carex variegata*. — *W. J. C.* *Asparagus tenuissimus*. — *L. H.* *Senecio grandifolius*; generally called *S. Ghiesbreghtii* in gardens. It is used in subtropical gardening for summer display outdoors. — *W. S. T.* The specimens are very poor; the withered leaf No. 3 cannot even be guessed: 1 appears to be *Codiaeum* (*Croton*) *Johannis*; 3, *Maranta Makoyana*; 4, *Cissus discolor*. — *Fairlawn.* 1, *Cyperus laxus*; 2, *C. alternifolius*; 3, better specimen required; 4, 5, 6, varying growths of *Ficus stipularis*, which is known in gardens as *F. repens*; the leaves are comparatively small until the plants are old, and vary according as the plant is grown against a wall or as a standard.

PEACH BLOOMING AT IRREGULAR TIMES: *C. C. C. G.* The buds were formed and matured at slightly different periods in the plant's growth.

PUNNETS: *J. B., Edmonton.* We cannot undertake to recommend trade houses. Could you not visit the great London markets, and ascertain the names and addresses of makers, &c.?

ROSE LEAVES HAVING BLACK SPECKS ON THE LOWER SURFACES: *J. J., Chertsey.* The excrements of minute insects—not fungus. Cleanse the leaves with soapy water, and then syringe them with clean water.

THE GLUT: *S. W. F.* You have overlooked the fact that your suggestion is already carried out as far as possible.

TIMBER AND ORNAMENTAL TREES ON A HEAVY CLAY SOIL: *G. P.* If the land is drained by deep, open grips (narrow ditches), or rubble drains, and trenched 2 feet deep, the following trees are likely to succeed, with shelter from the wind in the form of some quick-growing trees, as Poplar, Willow, and

Alder. For permanent trees, employ Oaks of all kinds, if ornamental planting is looked for; or the common British Oak if it is to be left for timber; also Hornbeam, Alders, Planes, American Walnuts, Sycamore especially, planting this last on the windward side, or every side except the south; common Ash, Silver Fir, Balm of Gilead Fir, common Spruce, Douglas Fir, and Weymouth Pine; 2 acres of land is a small area under timber, and it will not admit of a large miscellaneous collection being planted, without great loss in the cutting away or transplantation of trees when they begin to crowd each other. If it is to be all under one or two kinds, say Oak and Hornbeam, or Douglas and Silver Fir, or a mixture of the four, the deciduous species should be planted at 12 to 16 feet apart, and common Spruce used as nurse-plants, cutting these away as the trees approach each other. If all is to be under Douglas or Silver Fir, these may be planted at 3 ft. apart in quincunx fashion, and finally be thinned to double the distance; you will then obtain straight, clean boles, free from knots and big limbs. Ornamental species of Conifers might occur at prominent points, or at the sides of roads, and about the entrances; as *Abies amabilis*, *A. magnifica*, *A. pinsapo*, *A. nobilis*, *Sequoia sempervirens* (Redwood), *Thuja gigantea*, and *T. plicata*, all of which would grow well in the heavy land.

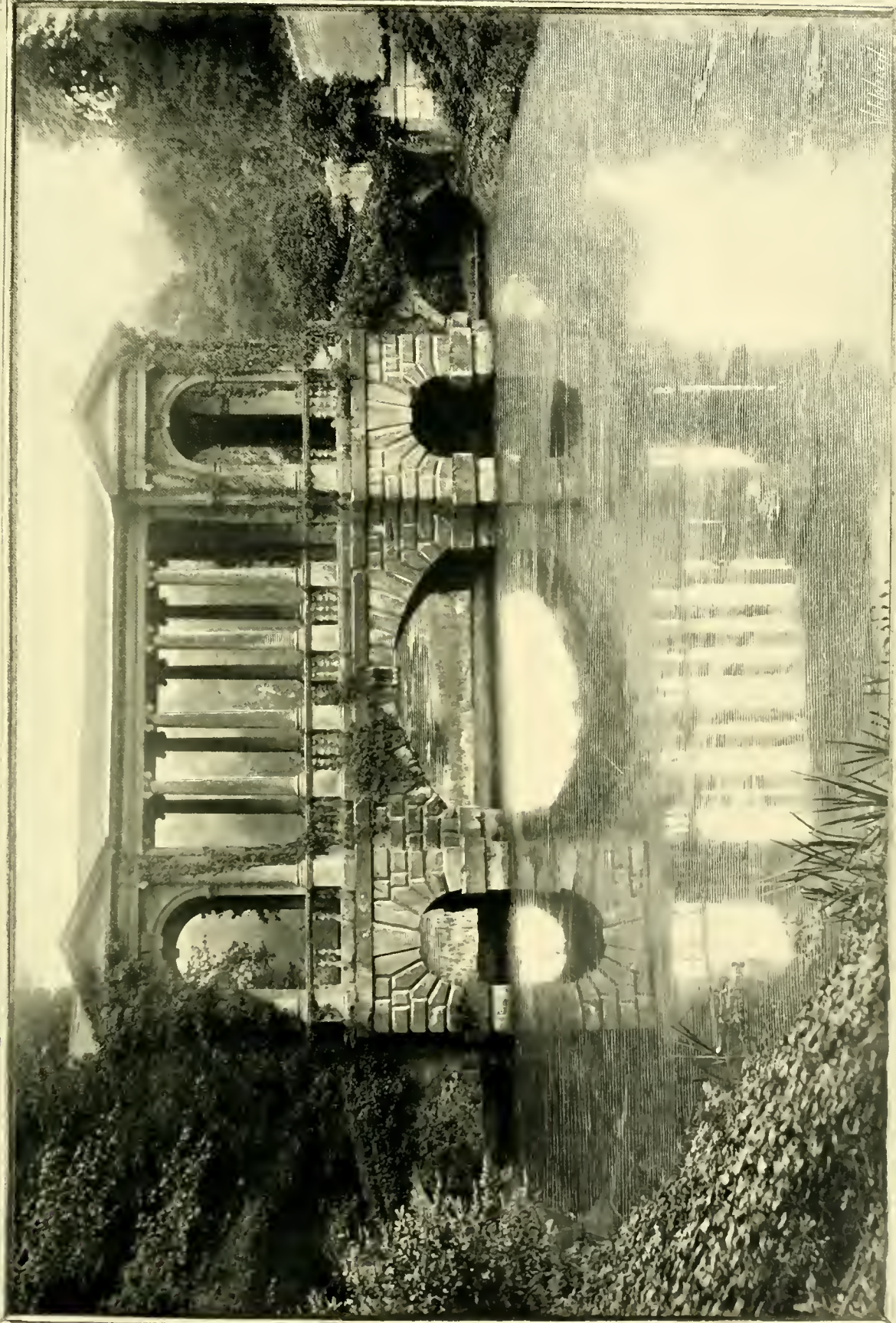
TREES AND SHRUBS FOR PLANTING AN ISLAND IN CONJUNCTION WITH POPLARS AND WILLOWS: *A. R. P.* If the flooding endures but for a brief period of time, *Hibiscus syriacus* = *Althea frutex*, *Bignonia* (Catalpa) *syringæfolia*, *B. Bungei*, and *B. speciosa*, *Rhododendrons*, *Kalmias*, *Andromedas*, *Pernettyas*, *Gaultherias*, the last five in peat, or light sandy loam and leaf soil; *Aralia Sieboldi*, *Lilacs*, *Quinces*, *Medlars*, *Gleditschias*, *Black Thorn*, and *Thorns*, *Crataegus* in variety; *Hippophae rhamnoides*, *Celtis orientalis*, *Ribes* of species, *Cornus sanguinea*, and others; *Benthamia fragifera*, and *Symphoricarpos racemosus*. Of Conifers plant any of the *Thuias*, *Juniperus virginiana*, *Pinus excelsa*, if the position is warm. *P. insignis* also; also *P. Strobus*, *Abies pectinata*, *A. balsamea*, *Pseudotsuga Douglasii*, *Tsuga canadensis*, and *Taxodium distichum*. Of deciduous trees choose *Juglans nigra*, *Carpinus betulus*, and most of the Oaks of the new and old world succeed in wet soils if the water be not stagnant. We know of no kind of bulbs that rats will not devour when hard pressed by hunger.

WATER-GLASS: *J. E. H. and G. W. C.* At the foot of the article we inserted three weeks ago is found the name of the writer, but the post town, Hineckley, was omitted. We have nothing to add to what was there stated. Doubtless we shall hear more about the undertaking shortly.

COMMUNICATIONS RECEIVED. — *W. G. G.*, specimen, with thanks. — *E. im T.*, Ceylon. — *S. W. F.*, *H. H. D'O.*, *W. W. & Co.*, *M. Durand*, Brussels. — *H. O. F.*, *W. M. W.*, *G. W. C.*, *J. A.*, *D. W.*, (Rev.), *W. P. W.*, *W. G. S.*, Leeds, many thanks. — *W. M. W.*, *W. G. S.*, Danstable, many thanks. — *J. M. H.*, *R. S.*, Birmingham. — *Adnit & Naughton*. — *R. H. P.*, *E. W. R.*, *R. E. M.*, *R. S.*, *Dr. W.*, *B. B.*, *J. J.*, *M. W.*, *A. D.*, *J. W.*, *J. G. W.*, *W. S.*, Expert. — *C. L. B.*, *J. A.*, *J. R. J.*, *R. P. B.*, A Horticultural Student. — *J. H. Maiden*. — *J. Whytock*. — *W. A. C.*, *W. H. C.*, *E. C. A.*, *H. J. W.*, *J. H. H.*, *H. S.*, Froggatt. — *J. W. P.*, Colocynth. — *Inquisitor*.

DIED. — On the 18th inst., in London, JANE ELIZABETH RASHLEIGH, aged sixty-six years, second wife of Jonathan Rashleigh, Esq., of Menabilly, Cornwall, and 3, Cumberland Terrace, Regent's Park, N.W., and only child of Arthur Pugh, Esq., of Lissadrome, Co. Mayo.

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



PALLADIAN BRIDGE, PRIOR PARK, BATH.



THE

Gardeners' Chronicle

No. 792.—SATURDAY, MARCH 1, 1902.

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SCHOOL GARDENS.

OF the school gardens which we now more frequently hear about in this country than formerly, two kinds may easily be distinguished. There are, in the first place, those intended for the benefit of elementary school children; and, in the second, others of which older pupils may avail themselves, in connection with what are called continuation schools.

At present it is only the latter style of garden which county councils can legally bring into existence, and directly assist with the money given to them for Technical Instruction. The fact therefore that the conference on school gardens, arranged lately by the Berkshire Technical Education Committee, dealt almost entirely with gardens for elementary schools, is worthy of note. It may be taken as additional evidence of the indirect help which the county councils are anxious to give to the Board of Education, in the endeavour to introduce a proper system of rural education for children.

It is being recognised, only too slowly perhaps, that it is better to learn by seeing and doing than by merely reading books.

In advocating, therefore, the formation of school gardens, in connection with which object lessons in Nature-knowledge are to be given as part of the school work, the Government has shown that it appreciates the educational value of gardening.

Already many elementary school teachers have been trained in technical classes how to teach their pupils to learn from Nature, and have been similarly initiated into many of the mysteries of horticulture. If, however, school gardens are to be encouraged as they should be, and made a success, it remains to bring before the teachers concerned the objects to be sought, as well as the difficulties in the way which some of their fellows have successfully surmounted, and to demonstrate the best model to be chosen. There is no better way, perhaps, of doing all this than by holding conferences like the one to which we have alluded.

Mr. T. G. Rooper, who was the principal speaker, very rightly made it clear that work in the garden of elementary schools must be entirely educational, and the utilitarian idea absolutely removed. We might say further, that an excellent training is gained from observing the growth and habits of living things, and gardening moreover exercises the memory, and its operations strengthen the limbs. On the other hand, the mere suggestion of turning out gardeners is ridiculous; the failure upon the part of critics to see that this is not intended, has oftentimes served to hinder the introduction of out-door work into the curricula of schools.

A comparison of the school-gardens, common on the Continent, with those of England, which Mr. Rooper is so well qualified to make, shows that while the latter are less elaborate, and probably afford less general information to the pupils, they are a great deal more practical and serve their purpose better. Indeed, the Germans themselves are prepared to admit this. Much may be learned from beds in which are found blossoms of decorative value, the flowers useful to bees, fruit-trees, vegetables grown as farm or garden crops, pot herbs, and plants used in medicine, as well as those of economic value, such as Madder, Flax, and Hops. The fact, however, remains that nine-tenths of the labour falls to the lot of the schoolmaster. In England, however, where the aim is only to grow the best sorts of vegetables and fruits, the children do all the work. Mr. Rooper claimed that English school-gardens are the best in the world; and Mr. J. C. Medd was able to quote the same opinion, in regard at least to one of them, as expressed by the High Commissioner appointed by Canada to study the question.

The schemes of work at this garden and one or two others, are given in an interesting pamphlet which has just been published by the Board of Education. Plans of various plots are also shown, and details of courses on plants and Nature knowledge, which are carried out at schools in Kent and Essex respectively, are included. The simple physiological experiments devised for the latter scheme are particularly worthy of consideration.

It must be remembered that the success of the school-garden depends, in a great measure, upon the man who inspects it. Mr. Rooper happens to be one of the

Government inspectors who has made the subject of horticulture his own. He is, however, the exception, and we sympathise with Mr. Macan, the Secretary of the Surrey Technical Instruction Committee, in his vain appeal to the authorities to appoint at least one man in the district who knows something about gardening.

There is much interest attaching to the experiences of an elementary schoolmaster, who at the outset thought that the difficulties in the way of his founding a school-garden were too great to be overcome. He did not know enough about horticulture to enable him to teach; how was he to get land; who would buy the tools; and where were the funds with which to purchase the necessary seeds? and so on. However, the master and some of his fellows asked the Oxford County Council to hold classes, after attending which the teachers passed the examination of the Royal Horticultural Society. A piece of the garden attached to the school-house was given up, and it was decided to start garden work if the parents of the pupils would provide the tools, while the small Government grant was allocated later to the purchase of material. Upon the day appointed for the inauguration of the garden, all the boys concerned appeared with spades in their hands, and a good beginning was at last made.

In this connection may be mentioned the formation of a new association organised by Mr. J. C. Medd, with Sir John Cockburn as Chairman, which it is hoped will hold an exhibition in London in July, where the results of the Nature-study work of all the various kinds of school in England, and possibly elsewhere, will be displayed.

Quite recently the Berkshire Technical Education Committee approved a scheme for the conduct of school gardens in connection with continuation schools; and at the Conference later in the day, a short paper by the County Horticulturist, Mr. Wright, brought out very strongly the useful work already done by them.

NEW OR NOTEWORTHY PLANTS.

STAPELIA BELLA, A. Berger (sp. nov.).

THE origin of this Stapelia is unknown to me. Since its introduction into this garden, some years ago, it has always been cultivated under the name of *Stapelia glauca* (from which, however, it is quite distinct), and no trace can be found of its antecedents or where it came from. It flowers abundantly every autumn, and proved very hardy in the severe winter of 1901, when it withstood a cold of $-3\frac{1}{2}^{\circ}$ Cels.

The structure of the flower is somewhat curious; it closely resembles the description recently published of *Stapelia mirabilis*, N. E. Br. The trembling hairs on the margin move, as in the *Tromotriche*; nevertheless the plant belongs to the sub-genus *Stapletonia*. It possibly might be a hybrid between an *Orbea*, or *Tromotriche*, and a *Stapletonia*. Mr. N. E. Brown, to whom I submitted this plant, and to whom I am much indebted for his kindness in helping me to name it, is also of this opinion.

The stems are erect, 6 to 7 inches high and $\frac{3}{4}$ of an inch broad, quadrangular, with short, papillose hairs, and with short, patent teeth at the angles. The flowers rise in threes or fours from a short common peduncle at the base of the young shoots. Pedicels short, $\frac{1}{2}$ to

$\frac{3}{4}$ of an inch long, reddish, puberulous. Calyx-lobes triangular-lanceolate, acuminate. Buds broad and flat-topped. Corolla with a short tube, radiate, with very patent, finally revolute lobes, externally green, with five reddish nerves, inside deep purple or brown, about 2 ins. broad. The corolla is of a very fleshy consistency, especially near the centre, where it is thickened in such a manner as to form a flat wall, which includes a short, pentangular tube, the inside of which is paler, and furnished with some reddish hairs of different lengths. The corolla-lobes are deltoid-ovate, glabrous, and fringed at the margins with long, simple, dark purple, trembling, and very deciduous hairs. Ligule of the corona erecto-patent, black-brown, from a broad base acuminate, and faintly tridentate. The inner divisions of the inner corona long filiform recurved, the outer divisions much shorter, wing-like, patent, triangular. *Alvin Berger, La Mortola.*

CULTURE OF THE ANÆTOCHILUS.

It would have been still more interesting if Mr. Budde, of Utrecht, had appended to his useful note in the last issue of the *Gard. Chron.* a list of the species cultivated by him. In my reference to them, Dec. 7, 1901, p. 410, I mentioned them only incidentally, and therefore did not indicate the species I at one time or other had through my hands, and it may be well to enumerate some of the leading species, and endeavour to place them under their recognised names, for although most of these pretty-leaved terrestrial Orchids are called *Anætochilus* in gardens, or perhaps more correctly *Anætochilus*, they include several very distinct genera, and probably if their flowers were readily available for comparison there would be more changes in their nomenclature. Their leaves are the great attraction, although the flowers are very pretty, and would be seen more often than they are but in my younger days it was generally thought to bring about the death of the plant to allow it to flower, and some form of the same notion still prevails. Certainly, as at present managed, the flowering of the *Anætochili*, with the exception of the varieties of *Hemaria discolor* and one or two more, seems to be fraught with peril. The reason of that is, that we have not as yet quite mastered the method of treatment of the plants, or we should be able to grow and flower each species in the same manner as other stove and greenhouse plants, and to that end the articles of Mr. Budde and Mr. Micholitz will lend assistance. I think the use of fibrous loam in the compost in which they are potted, and observance of Mr. Budde's hint about keeping them on the shady side of the house, and which Mr. Micholitz indirectly suggests when he describes them as growing in forests, would make two good points to work on. My own experience is that the *Anætochili* like a good clear light, but are soon damaged by the direct rays of the sun.

The species I had, and which may perhaps be found here and there in gardens still, were *Anætochilus argyronceus*, and *A. Frederici Augusti*, which sometimes appeared as *A. xanthophyllus*; *A. regalis*, a Ceylon species; *A. concinnum*, an Assam ally of it; *A. setaceus*, and its variety; *A. cordatus*, *A. Reinwardti*, and *A. Roxburghi*, also known as *A. Lobbianus*. Among some of these species there is great variation in the tint and marking of the leaves, and garden names have been given them. Of a more slender and ascending habit are *Physurus argenteus*, *P. Orgiesii*, *P. pictus*, and *P. querceticola*, the first three with

silvery veined leaves, and the last of a bright green, with oblique silvery markings.

Macodes Petola, with its bright green leaves beautifully veined with silver, is one of the strongest and freest growing. It is not an uncommon thing to see a pan of it with several growths in a shady part of the stove-house, without a bell-glass.

Macodes Sanderiana, more often called *Anætochilus Sanderianus*, is the recent introduction referred to by Mr. Micholitz, Feb. 22,



FIG. 40.—STAPEFIA BELLA.

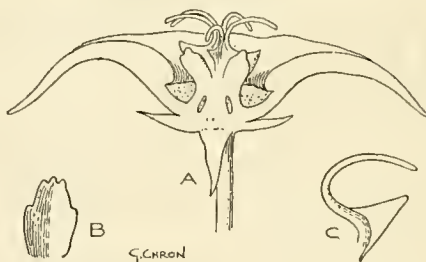


FIG. 41.—STAPEFIA BELLA: DIAGRAM.

A, Section through the flower.

B, C, Floral details.

(See p. 137.)

p. 130. It may be likened to a robust and still freer-growing form of *M. Petola*, though quite distinct.

Dossinia marmorata, or as it is generally called, *Anætochilus Lowii*, is another strong-growing species, with large olive-green leaves, beautifully veined; and it succeeds well with but little trouble if a suitable place to grow it—that is the most important factor in all the other cases—be found.

The noble species which Mr. Micholitz mentions of *Anætochilus Leopoldi* is doubtless *Dossinia Leopoldi*. I can fully bear out all his remarks about it, for I was fortunate enough to be President of the jury of the Orchid section at the great Ghent Quinquennial Show, April, 1898, and remember its beauty, although shown, I believe, in the battered and travel-stained case in which it made its long and rough journey.

The section known as *Goodyera*, and including forms of *Hemaria discolor*, are free to grow and flower, and I have used the flowers of them for cut blooms. The old variety is well known, and *H. d. Dawsoni*, with its velvety chocolate leaves veined with red, and the green form of it known as *H. d. Ordiana*, have leaves of great beauty and pretty spikes of white flowers.

Of hybrids we had *Anætochilus* × *Dominii* and *A.* × *Veitchi*, both crosses between *Anætochilus* and *Hemaria discolor*. Both received First-class Certificates at the Royal Horticultural Society in 1865 as *Goodyera*.

Other distinct things known as *Anætochilus* in gardens are *Goodyera Rollissoni*, since identified by Mr. Rolfe as a *Macodes*; *Zeuxine regia*, with its narrow olive-green leaves, bearing a rosy-silver band down the middle, and which is better known as *Anætochilus striatus*, and *Monochilus regius*, the last generic name being an awkward complication, for it had been previously used for a genus of *Verbenaceæ*. Then we have the pretty *Nephelaphyllum pulchrum*, a Malayan species of comparatively easy culture. These all go under the common denomination *Anætochili* in some gardens, and so far as I have been able to prove them, all require a warm plant-house, preferring the shady side of a plant-stove to an Orchid-house. But there are a few worthy to associate with *Anætochili* which I have grown well in a cool house. These are the North American *Goodyera repens*, and *G. pubescens*, with green and silver leaves; and the pretty bronzy-leaved Japanese *G. velutina*.

Reminiscences of times gone by are the reward of all who have studied plants for many years, for when special sections are thought about, old friends temporarily forgotten, again appear before the mind's eye. The name *Goodyera* recalls a plant which I have long since lost sight of, although I think it has been recently imported again, viz., *Goodyera macrantha*, brought from Japan by the late John Gould Veitch, and figured in the *Gardeners' Chronicle* in 1867. The plant had the habit and beauty of an *Anætochilus*, the leaves being olive-green, with emerald-green veining, the sides bordered with light yellow. I always thought it was a Japanese garden production, or variegated form of a type without the yellow border. The flowers borne close down to the leaves are very curious. It was also called *Georchis*. Another pretty species now probably lost is *Goodyera rubrovenia*. Many of these pretty things have been lost from keeping them too warm continually, and not lowering the heat and moisture when the growths have finished, I believe. But let it not be thought that I am posing as one who has at any time thoroughly grasped the successful culture of what are called *Anætochili*, for when I was generally more successful than most others, I never had them in thoroughly safe and satisfactory condition throughout. One or other was continually turning sulky, and to meet that I adopted the plan of propagating them frequently, and that method prevented actual loss, and gave the best results. Perhaps others may give their experience on this interesting subject. *James O'Brien.*

THE ROSARY.

ROSA LUCIDA.

THERE are many single-flowered species of Roses that are invaluable for grouping in the garden and pleasure grounds, and *R. lucida* is one of them. It is a very hardy species, and readily raised from seed for the purpose of naturalising or planting in large groups, say, from 20 feet to 25 feet across. The plant spreads underground, and grows to about 4 feet in height. The shoots are slender, the

growth is free, but not quite so strong as that of *R. rugosa*, or some of the other varieties, and the fruits are not so numerous or handsome. This is but of secondary importance, as the flowers are produced in great abundance, and perfume the air for some distance around, especially if there are many plants. For this reason a situation near a walk is appropriate. Varieties of *R. rugosa* grow freely, require no pruning, and generally speaking, but little attention. The foliage is fine and very distinct, and the ripe fruits are showy in the early autumn. *J. G.*

about the present date. As some thousands have passed through my hands, I claim to know something about them. Long, green, sappy growths are usually of one year's growth, and therefore unsatisfactory if left at full length; and I advise their being cut down for dwarfs, as the nearer the roots the better is the wood ripened. Black hide-bound stocks are not suitable, and they seldom afford satisfactory shoots for budding on, and sometimes they remain quite dormant. The sort of stocks I have found invariably to succeed are from two and three years' growth, with firm green and brown-veined bark, similar to a nearly ripe, nicely netted, green-fleshed Melon. The stock should be quite straight from the ground-line, and if ultimately to carry a good head, should not be less than $\frac{3}{4}$ -inch in diameter, and 3 feet or more in height on stem, without any with bends or crooks; clubbed roots should be thrown aside. Briar cuttings for making dwarf stocks can still be made, and can usually be found in the hedgerows. A cutting should measure 6 to 9 inches long from straight ripe shoots. Disbud from the butt end, and leave only three or four buds at the top. Do not choose shoots that are commencing to grow, these being useless for the purpose. *J. D. Godwin, 29, Cleveland Road, Southsea.*

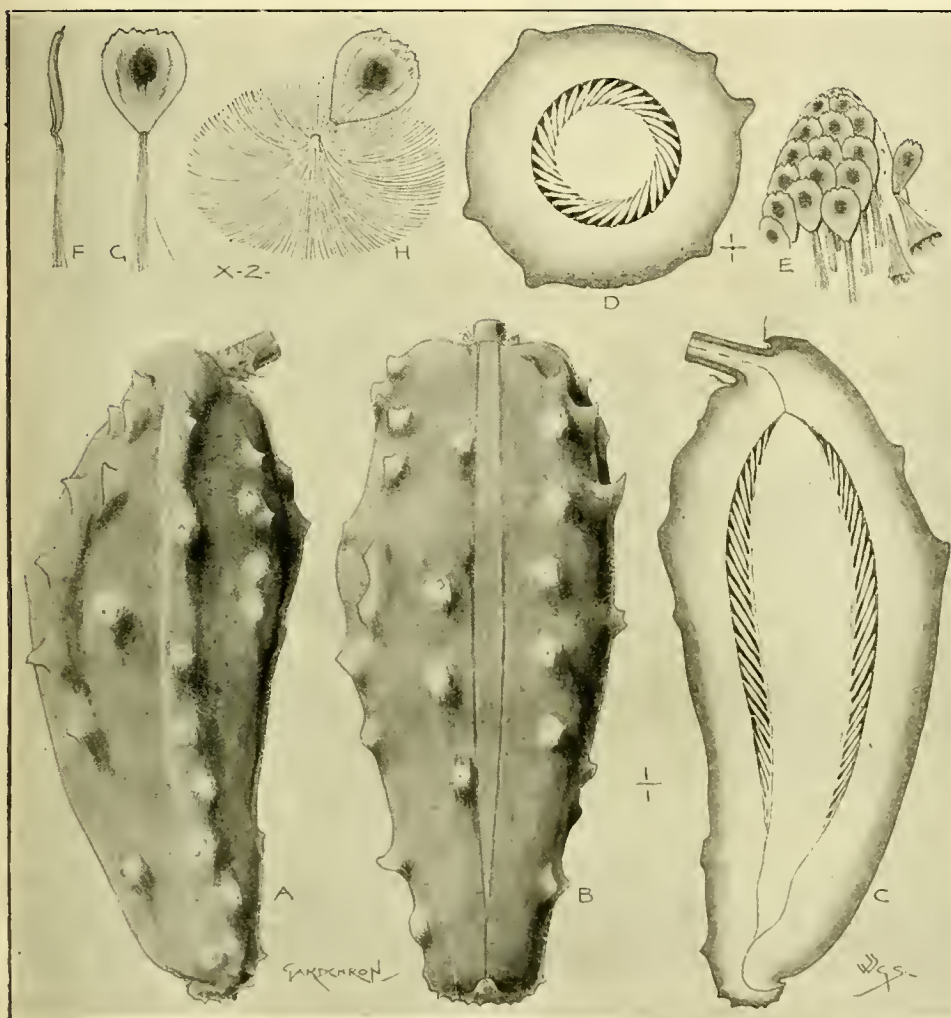


FIG. 42.—SEED-VESSEL OF *ARAUJA GRAVEOLENS*.

A, Side of fruit; nat. size.

B, Back of fruit; nat. size.

C, Longitudinal section of fruit; nat. size.

D, Transverse section of fruit; nat. size.

E, Central axis with imbricated seeds; nat. size.

F, G, Front and side of seed showing appressed seed-hairs; $\times 2$.

H, The hygroscopic seed hairs expanding and pushing off the seed; $\times 2$.

When the fruit is cut, each tuft of hairs quickly opens like an umbrella, and pushes the imbricated seeds from the fleshy central axis. Each seed has a loosely-attached tuft of hairs at its base.

FRUIT OF *ARAUJA GRAVEOLENS*.

WE give this name with some hesitation, as there seems to be wild confusion in the nomenclature of these plants, a confusion it is not in our power to disentangle; all we can do for the moment is to avoid coining a new name to add to the embarrassing synonymy.

The fruits we now figure are similar to those of *Arauja albens*, which we have illustrated on various occasions; but they differ in their more elongated and slender form, and in the coarse tubercles by which they are beset. The plants are nearly allied to the *Stephanotis*. The seed-pods illustrated (fig. 42) were obligingly sent to us by Mr. W. H. Clarke, of the gardens, Aston Rowant, near Wallingford, under the name of *Schubertia grandiflora*. This is, we believe, synonymous with *Arauja graveolens*, Mast., in *Gardeners' Chronicle*, September 8, 1888. The action of the seed-hairs in detaching the seed as described by Mr. Worthington Smith in the note beneath the figure is very noteworthy.

BERLIN.

LATANIA VERSCHAFFELTI, Lem., &c.

AMONGST the fan-leaved Palms, all the species of the genus *Latania* are jewels. Two of them are frequently met with in the collections of the amateur, viz., *L. Commersoni*, Gmelin, better known under the name *L. rubra*, and *L. Loddigesii*, Martius, which is also distributed under the name *L. glaucophylla*. The former is a variable Palm, as I have seen from many seedlings, as the purple margins of the segments vary in width. The finest varieties are those in which the purple colour is spread over the whole lamina, but these are seldom seen. *L. Loddigesii* differs in the glaucous nature of the petioles, and also in the seeds; but the plants lose their seeds, and the glaucous tint often gets washed away, and then it is difficult to distinguish this species from the other. The next young leaf to appear will prove the identity. The seedlings of these two species are remarkable in that the first leaf is from the beginning fan-shaped with deep sections. I know no other fan

STANDARD AND DWARF BRIAR STOCKS FROM CUTTINGS.

It is rather late in the day to touch on the above, seeing that they are usually planted in early winter. Still, it will occasionally happen that through pressure of work planting is delayed, the stocks being heeled in. Personally, I have been as successful with spring as with autumn plantings by taking the precaution of heeling them in directly they are received, and mulching the ground heavily with short litter. The few hints on selection I am about to give would have been more appropriate to the matter in the autumn, at the same time they will apply to stocks planted at

ROSE BLANC DOUBLE DE COUBERT.

Where the varieties of *R. rugosa* are cultivated, this variety should be included. It is a double-flowered form of *rugosa alba*, and fairly well known considering the comparatively short time it has been in commerce, and being one of the best it may be confidently recommended to planters. The habit of

foliage is glossy, the red flowers are produced near the points of the shoots, and the ripe, globular fruits are attractive after the leaves have fallen. The bare stems are of a deep red colour, and are effective in the winter sunshine. *J. G.*

Palm which has this characteristic, for the famous *Lodoicea seychellarum*, the first leaf of which is also fan-shaped, is no true Fan Palm, but intermediate between Fan and Feather Palms. Whether the third species of *Latania*, *L. Verschaffelti*, Lemaire, also known under the name *L. aurea*, Duncan, has the first leaf fan-shaped, I cannot say, as I have not yet had seedlings of it. This rare Palm is not to be confounded with the yellowish-green *Livistona aurea*, which is, it seems, a form of *Livistona chinensis*. The true *Latania Verschaffelti*, a Palm 40 feet high, has petioles 5 to 8 feet long, densely tomentose with orange margins, which are spiny on young plants. The pale green blade is $4\frac{1}{2}$ to 5 feet in diameter, with divisions $2\frac{1}{2}$ feet long by 2 inches broad, acuminate, the entire margins and the veins beneath slightly tomentose. It grows abundantly over the island of Rodriguez. It is a curious fact that the Palms of the Mascarenes and the neighbouring Seychelles have so often coloured margins. Besides the above, I note the *Dictyosperma album*, with orange margins when young; *D. rubrum*, which is by no means a variety of the former, with purple margins; and *D. furfuraceum*, also with purple margins. Other colours than green on the leaves of Palms from that region are not scarce, i.e., *Chrysallidocarpus lutescens* (better known as *Hyophorbe lutescens*), which is, by the way, not identical, as often is said, with *Hyophorbe indica*, as *Chrysallidocarpus* forms many slender stems 2 to 3 inches in diameter, whilst those of *Hyophorbe indica* are about 6 inches thick and single; then *Hyophorbe amaricanilis*, with fine violet petioles; *Hyophorbe Verschaffelti*, and *Phœnicophorium seychellarum*. This is a curious coincidence. Our Supplementary Illustration shows a fine specimen of *Latania Verschaffelti* as grown in the famous Botanic Garden at Buitenzorg. I am very much obliged to Professor Treub for kindly sending me the photograph. Dr. Udo Dammer, Berlin.

THE PROPAGATION OF BOUVARDIAS.

In order to obtain good plants for flowering the following autumn and winter, the cuttings should be put in not later than the middle of March, and if earlier, then all the better, if the cuttings are good ones. Plants that have been dried-off and cut back break freely when put into heat and kept syringed, and but little water afforded at the roots until they are well started. The plants should not be cut back too closely, and old leaves may be removed entirely. Before starting, it is a good plan to dip the plants in some fairly strong insecticide.

The cuttings should consist of shoots that have made two pairs of good leaves, taking them off close to the old shoots. A cutting requires but little "making," and they root just as freely when cut between the joints as when severed at a joint, but short-jointed cuttings with buds at the base make the best plants, for they will usually break from the buds under the soil if stopped at an early date.

The cutting-pots should be filled with a compost consisting of equal parts of loam, peat, and sand, with a little extra sand on the surface. I like the surface-sand to be quite dry, so that it will run down when the dibber is taken out of the soil, and thus afford a good base for the cuttings. I should add that the soil in the pots should be made just sufficiently firm to hold the cuttings erect, the *Bouvardia* being an exception to most fine-rooted plants, rooting better in a loose, open compost, and making better growth. Do not let the cut-

tings wither, and place them in the warmest part of the propagating-pit on a good bottom-heat. When afforded insufficient heat, the cuttings get hard, and are a long time in starting into growth. I usually stop *Bouvardias* once in the cutting-pots, and pot them off as soon as they have made fresh shoots, but potting them singly. It is very necessary to keep the plants growing freely from the start, and it is only when they receive proper attention in the early stages of growth that their full value can be realised. Most of the varieties, if propagated at this season, will make good plants by the autumn, but *B. Humboldtii corymbiflora* requires to be two years old to flower it satisfactorily, and this variety should not be stopped so late in the season as those with the rough leaves, such as *B. Hogarthi*, or *B. President Cleveland* and *B. Vreelandi*.

I may add that *B. Humboldtii grandiflora* is an improvement on *B. H. corymbiflora*, and one of the best for affording cut flowers, as with good treatment it will furnish flowers from June till October. *Bouvardias* require no artificial heat from June till September, but full exposure to the sun, with plenty of air and careful attention to affording water, with liquid-manure freely applied after they begin to flower. A. Hemsley.

FRUIT-TREES BY ROADSIDES.

"FRANCE has over 500,000 of these, and is planting more every year." Surely this is an object-lesson to us all in Great Britain, and especially in Ireland, and the idea may meet with some favour from our agricultural or forestry societies, and the country, district, or urban councils. Hardy fruit-trees, Apples, Pears, Plums, or Cherries, are so handsome when in bloom, that they deserve planting for beauty alone, apart altogether from the prospects of a fruit crop.

In America, Cranberries are sometimes grown on sandy wastes on a communal plan, and there is no reason why fruit-bearing trees should not be planted beside the roads near to our villages and country towns, and the fruit sold publicly by auction, and devoted to the upkeeping of the roads, or to other public objects.

Some may naturally object, and say the fruit would be stolen. At first this may take place; but why is not the fruit stolen in France, Germany, and elsewhere, where fruit-trees by the roadsides is an old-established institution?

By planting tall standard trees, the danger of wholesale theft would be minimised, and no one would object to the thirsty wayfarer taking and eating the fruit that fell to the ground; even the few knocked off by sticks or stones would not much affect the total crops.

The best of cider Apples, often very handsome in flower and fruit, though almost inedible, might at least be grown. F.W. Burbidge.

A CENSUS OF GARDENERS, &C., IN THE ADMINISTRATIVE COUNTY OF LONDON ON MARCH 31, 1901.

UNLIKE the method adopted at previous censuses, when the occupations of the people of England and Wales were published in one volume, and at a late period after the taking of the census, the authorities have created a new departure this time by publishing the results of the census taken less than a year ago in County Sections. The first occupational results to appear are those relating to the Administrative County of London, which comprises the City of London, together with the

twenty-eight Metropolitan Boroughs constituted under the Local Government Act of 1899. The figures given showing the number of gardeners (not domestic), nurserymen, seedsmen, and florists, enumerated within this area at the recent census are as follows:—

Total numbers, males, 6,858; females, 1,260.

These totals are distributed under the following range of ages:—

| Ages. | Males. | Females. | Ages. | Males. | Females. |
|-------|--------|----------|----------------|--------|----------|
| 10 | 10 | 3 | 45 | 1,387 | 89 |
| 11 | 50 | 19 | 55 | 1,114 | 60 |
| 15 | 479 | 333 | 65 | 598 | 18 |
| 20 | 554 | 299 | 75 and upwards | 143 | 6 |
| 25 | 1,276 | 273 | | | |
| 35 | 1,247 | 155 | | | |
| | | | Totals | 6,858 | 1,260 |

Of the 6,858 males, 440 are described as "employers," 4,898 as "working for employers," 1,358 as "working on own account," and 162 as "others, or no statement."

Of the 1,260 females, 42 are described as "employers," 1,025 as "working for employers," 151 as "working on own account," and 39 as "others, or no statement."

The following table has been prepared, showing the localities in which the gardeners, &c., were enumerated:—

| | Males | Females |
|---------------------------------|-------|---------|
| City of London | 11 | 4 |
| Battersea, Metropolitan Borough | 167 | 45 |
| Bermondsey | 38 | 4 |
| Bethnal Green | 37 | 14 |
| Camberwell | 384 | 33 |
| Chelsea | 17 | 29 |
| Deptford | 130 | 21 |
| Finsbury | 26 | 52 |
| Fulham | 326 | 46 |
| Greenwich | 226 | 17 |
| Hackney | 307 | 40 |
| Hammersmith | 259 | 40 |
| Hampstead | 325 | 31 |
| Holborn | 58 | 66 |
| Islington | 403 | 110 |
| Kensington | 291 | 78 |
| Lambeth | 699 | 77 |
| Lewisham | 791 | 39 |
| Paddington | 103 | 72 |
| Poplar | 38 | 8 |
| St. Marylebone | 182 | 51 |
| St. Pancras | 313 | 75 |
| Shoreditch | 22 | 31 |
| Southwark | 103 | 28 |
| Stepney | 74 | 44 |
| Stoke Newington | 95 | 12 |
| Wandsworth | 840 | 65 |
| Westminster (City) | 133 | 113 |
| Woolwich | 160 | 12 |
| Totals | 6,858 | 1,260 |

A. R. Bellingham, 10, Brompton Square, S.W.,
February 15, 1902.

TREES AND SHRUBS.

POPULUS MONILIFERA AUREA (P. CANADENSIS AUREA).

IN gardens where the planting of groups of trees and shrubs is carried out for the effect produced by their foliage in summer, this golden Poplar is one of the best, because of its good colour. It is a tree that is somewhat pyramidal in outline, and if it grows too high, it can easily be reduced by removing the leader. Those from 15 feet to 20 feet high form effective contrasts with, amongst other shrubs, *Prunus pissardi* and the purple hazel. The bright yellow foliage of this Poplar is very telling at a distance throughout the summer. J. G., Batsford Park Gardens.

EUCALYPTI.

A few weeks since some notes appeared in the *Gardeners' Chronicle*, p. 456, in which *E. coccifera* is stated to be synonymous with *E. amygdalina*. I think an error must have crept in, and one of these names got printed in mistake. The two species are very distinct here in the young state (5 feet high), and correspond to the descriptions given in Nicholson's *Dictionary of Gardening*. [*E. coccifera* is considered to be a mountain form of *E. amygdalina*. Ed.] But my chief object in writing is to state that *E. coccifera* is the only species I can obtain at present that is likely to prove hardy here. I have tried eighteen

different species during the last eight years, and will let you have a full report of them later. Many persons will now be ordering their seeds, and some may like to try *E. coccifera*; it is a much neater growing species than *E. Globulus*, and has smaller and whiter stems and leaves during the first year; the whiteness disappears to a great extent when the leaves get older. *E. cordata* is next to the above in hardness in my collection, and its leaves put on some pretty purple tints in the winter. *E. resinifera* was sent me by my friend the late Mr. Ewbank, but has not proved so hardy here as he anticipated; he was misled by the description given him by the Italian monk. *E. ficifolia* I have not yet tried;

the 12° of frost experienced at Poltimore seems to have had no injurious effect on them, owing to the fact that the air at the time was very dry. [For an illustration and an interesting history of this species, see *Gardeners' Chronicle*, April 23, 1892. Ed.]

KEEVIL MANOR.

OUR illustration (fig. 43) shows a view in the garden attached to the Manor House, Keevil, a remote village in Wiltshire, seven miles or more from Trowbridge, and sixteen or eighteen miles from Bath. The house is an Elizabethan structure, and the residence of Colonel Sir J. W. Wallington, K.C.B. The

berths for first-class gardeners who are steady men. When in Adelaide, South Australia, a few months ago, Mr. Henry Sewell, the leading nurseryman there, was lamenting the great deficiency of trained gardeners, and said: "I want such in my nursery, and I could place a few in good situations if I had them on hand." I promised, on my return, to make his wants known, but my return is so uncertain, and as the question is before the craft, I avail myself of your valuable medium to deliver my promised message to the gardeners of Great Britain. Those desirous of leaving home should write to Mr. Henry Sewell, nurseryman, Adelaide, South Australia, and as he is a very polite man, with a good heart, I am



FIG. 43.—THE MANOR HOUSE, KEEVIL, WILTS.

can anyone tell me where to get seed of it? *E. Gunnii* is not hardy here. When travelling about Ireland last autumn I watched for any *Eucalyptus* that appeared to be hardy there, but very few were to be seen; the oldest plants were two of *E. Globulus* in a cottage garden near Arklow (these had evidently been cut back by frost), and an old plant of *E. coccifera* at Fota, which must have been growing there for many years. Perhaps the gardener, Mr. Osborne, late of Fota Gardens, if he sees this, may be able to give some particulars as to what species have been tried there. W. H. Divers, *Belvoir Castle Gardens, Grantham*.

PRUNUS DAVIDIANA.

This, one of the earliest of trees to flower, should, writes Mr. Slade, of Poltimore Park Gardens, find a place in every garden that can afford it a spot for full development. The long, slender shoots are crowded with the pretty white blossoms at the present time, and

view is interesting, as showing an exceedingly pronounced representation of the formal type of gardening, in a locality where there is no railway station for several miles, and which is so remarkable for old-world characteristics. Probably this extreme cultivation has been practised to afford distinctness to a garden surrounded by natural beauty and contrast on every side.

The photograph is one by Mr. W. Rossiter, Bath.

COLONIAL NOTES.

THE EMIGRATING GARDENER.

READING the *Gardeners' Chronicle* this morning, dated January 11, my eye fell upon Mr. A. Harding's invitation to gardeners to better themselves in the United States, where there are no doubt numerous chances. There also are in our colonies many advantages and good

sure he would answer all such letters. There are many places open in other parts of Australia, but it is only in Sydney where there is an organisation ready to give a helping hand to new arrivals of the craft, and as this may not be generally known, I advise all gardeners going to New South Wales to go at once to the Gardeners' Association Rooms, Queen's Hall, Pitt Street, Sydney, where there is generally a good gathering of gardeners, and a little flower show of things of special interest each Friday, from 8 to 10 P.M. Then there is Mr. Robbie, Superintendent, Hyde Park, Sydney, who generally knows of any situation for a gardener, and who could put young men in the way of finding some kind of employment. A reference to this notice, and your correspondent's name, would not be without its effect. In Melbourne, Mr. Purvis, manager of F. Hamilton Brunning's seed business, would be a useful man; also Mr. Cheesman, nurseryman, Melbourne; and my good

friend Mr. Beatson, of George Anderson & Co., seedsmen, George Street, Sydney; and fruitmen would find Mr. Carl B. Luffmann, Royal Horticultural Gardens, Burnley, Melbourne, very sympathetic.

ST. JOHN'S BREAD.

In the same article reference is made to a good hedge. The finest I have seen in my travels is one made of St. John's Bread (*Ceranton siliqua*)—pleasant to look upon, secure as a stone wall, and handsome throughout, with none of those blemishes so constantly seen in hedges of *Coniferae*. This beautiful hedge surrounds Mr. Henry Sewell's nursery, in which is one bed with upwards of 500 varieties of Roses, including all the newest from Europe. Mr. Henry Sewell's nursery, Adelaide, is the best ordered one I have seen in my travels, and I am glad to make this testimony. Mr. Sewell is an old country gardener, and a genuine lover of plants, greatly esteemed and appreciated by the amateurs around Adelaide, whose sound advice can always be relied upon. He is also a great encourager of park development around Adelaide, which is the most beautiful city of Australia, surrounded, as it is, with its delightful hills within a few miles of the town, and which forms a summer residence for the well-to-do, as it is cool on the hottest day, the town being the winter residence of the families who have a house on the hills. *Peter Barr, V.M.H.*

The Week's Work.

THE ORCHID HOUSES.

By W. P. BOUND, Gardener to J. COLMAN, Esq., Gatton Park, Reigate.

Cattleya labiata autumnalis variety.—This plant is now exhibiting signs of renewed activity, and if any plant seems to require dividing, the operation should be carried out in the manner advised previously. Others not calling for subdivision may be top-dressed after removing the surface-compost, remembering that a root saved is a root made. A suitable compost which is both nourishing, lasting, and porous, consists of fibre-peat three-fifths, chopped sphagnum-moss one-fifth, and leaf-soil one-fifth, well mixed together. Fair drainage should be afforded, using discretion as to the quantity required by the health of the plant, a vigorous plant not wanting so much as a sickly one; and I would advise the crocks to be used in an erect position. Plants that are in small pots and in good health will only require potting-on, not disturbing the ball unless the compost is in a bad condition. Others that have gone back should be reduced, removing the whole of the useless back pseudo-bulbs in order to give the new growth the advantage of the roots made. In potting, the bud should be kept just a little above the rim of the pot. Carefully insert the compost among the roots rather firmly, and finish off with a few clumps of good sphagnum-heads on the surface. The plants will require for the present water only when the compost is dry. Damp freely between the pots on bright days.

Trichopilia fragrans and *T. f. var. nobilis* are two lovely white flowering Orchids, well worthy of general cultivation. A suitable place for these plants is a shady part of the intermediate-house, but the materials should not be allowed to get very dry, and when growing the plants should be afforded water very freely. The plants at Gatton are growing fast at this season, and should any of them need potting the best time for the operation is when the young growths are about 2 inches high. The potting compost may consist of equal parts of turfy peat and chopped sphagnum-moss. In sunny weather generally, and all through the summer months, *Trichopilias* are much benefited by syringing them once or twice a day.

Aërides.—Plants not needing to be repotted should have much of the compost on the surface removed and be top-dressed. Clean, picked sphagnum-moss two-thirds, and turfy-peat (out of which the finer particles are shaken) one-third, pressing the whole firmly. When repotting is required, get the plant as low down in the new pot as the leaves will allow, and cut away as much as possible of the old stem. When a plant has got tall and lanky, and possesses no air roots on that part where severance would be desirable, the stem should be mossed over, and kept damp in order to encourage roots to form before severing it. A shady corner in a moist stove forms a suitable home for *Aërides falcatum*, *A. f. var. expansum*, *A. Lawrenceae*, *A. odoratum*, *A. Sanderianum*, *A. Savageanum*, and others. *A. Fieldingi* and *A. affine* should be grown under rather cooler conditions. Repotted plants should be frequently damped at the sides of the pots, and strong sunshine not be allowed to reach them. If the house is very humid, but little water will be wanted at first, and nothing more afforded than a damping of the surface of the compost, so that the sphagnum-moss may not die.

Shading.—During bright weather lower the blinds on Orchids requiring shade, and Orchids that have been divided or bought in as imported recently, and over all small seedling Orchids. But do not shade too freely the *Odontoglossum*, although it will very soon be necessary to shade these in the middle of the day when the sunshine is stronger; but as yet a little sunshine together with good ventilation gives strength and firmness to the growths which have been developing during the winter. Each man must use his own judgment as to the amount of sunshine his plants will stand without being injured.

THE KITCHEN GARDEN.

By T. TURTON, Gr. to J. K. D. WINGFIELD DIGBY, Esq., Sherborne Castle, Dorset.

Parsnips.—Assuming that the land for this crop has been deeply dug, after being trenched for a previous crop, take the first opportunity when the surface of the ground is dry enough to admit of it being trodden upon to roughly rake it over, and make the surface level. These proceedings, although not absolutely necessary for obtaining good roots, help to make a good tilth, and are in keeping with good workmanship. But it is always advisable to wait for fine weather, rather than to carry out the work when the weather and the land are alike in an unsuitable state. Let drills be drawn 18 inches apart and 1 inch deep, and sow the seeds singly 2 or 3 inches apart in the drills. This entails a little more time than scattering the seed in the usual manner, but it is of advantage when the thinning has to be done.

The Onion Quarter.—If the ground was trenched as advised in a previous Calendar, it will have become pulverised by frosts, and advantage should be taken of fine weather to break up the clods and loosen the soil to the depth of 9 inches; and after it has dried sufficiently, and been well trampled upon all over, afford a moderate dressing of fresh soot previous to raking it down. Stiff land should be afforded a good dressing of charred garden refuse, which will have the effect of preventing the soil running together and getting compacted when it is trodden upon. It is so important to have a well made seed-bed for the Onion-crop, that no labour should be considered too great to obtain this, and it is advisable to wait a week or longer rather than to sow when the ground is in an unfit state. Sow the seed thinly in drills at 15 inches apart, and draw them from the same end of the ground, when there will be less likelihood of the drills varying in width, as is the case when the drills are drawn from both ends.

Seakale Ground.—If not already done, the ground for this should be well prepared by deeply trenching it forthwith, affording a liberal dressing of rotten farmyard manure if

the soil be light; but if of the opposite nature, then three parts rotten stable manure will be more suitable. In either case place the manure at the bottom of the trenches, and thus induce the roots to strike downwards, as they will in search of the manure, and hence better crowns also straighter and better roots for making into sets.

Jerusalem Artichokes.—With the return to suitable weather, let tubers be planted as early as possible, choosing a bit of ground that is retentive and has been deeply worked, but not necessarily heavily manured. Planting in such land encourages early tuberizing without the need for affording water in dry weather, which is the case when planted in shallow cultivated soil. Where they must be grown on the same piece of ground year after year, and they are often employed in this way to hide something objectionable during the summer months, let the crop be lifted as soon as the state of the weather will admit. Then find the number of sets that will be required when planted at 2 feet apart each way to plant the piece of ground, and select clean tubers about the size of a hen's egg. Place the lifted crop of tubers in a heap in any cool place out-of-doors, and cover them with rough straw or bracken. Deeply trench the ground every alternate year, and when the opportunity offers for doing so exchange some of the soil.

THE FLOWER GARDEN.

By R. DAVIDSON, Gardener to EARL CADOGAN, Culford Hall, Bury St. Edmunds.

Seeds.—Seeds of bedding Petunias may be sown at about this date, preferably the single-flowered varieties, than which, when the strain is a good one, nothing can be prettier. The plants succeed in almost any position in the garden, and flower profusely for a long time. Sow also seeds of *Dianthus Heddewigi* and *D. chinensis*, very excellent annuals for filling small beds; *Ageratum* and *Nemesia strumosa* Suttoni, a pretty, floriferous little plant, useful for planting in beds and border or in conjunction with other plants. Sweet Peas and *Mignonette* may now be sown out-of-doors in well-manured and deeply-dug soil. For affording flowers for cutting, a sowing of each should be made once a fortnight until the end of the month of July.

Propagation.—Many kinds and varieties of bedding plants now claim the gardener's attention; and cuttings that were inserted in the propagating-frames and house at the beginning of last month being well-rooted, should be forthwith put into pots or boxes. *Iresines*, *Heliotropes*, and *Abutilons* should all be potted singly in 60's in a light, rich compost. *Alternantheras* may be placed in shallow boxes at 3 inches distant from plant to plant, and if a little wood-ashes or even coal-ashes be added to the soil, the colouring of the foliage will be much enhanced. Cuttings of *Nasturtiums*, *Sweet Alyssum*, and *Mesembryanthemum cordifolium variegatum* may be put closely into boxes, the soil for the last-named consisting of loam, decayed manure, and sand in equal proportions, about one-sixth of the whole of lime-rubbish.

Edgings.—If the various kinds of live edgings employed for the margins of large beds, &c., be lifted at this date, and the ground well dug, if necessary a small quantity of fresh soil added, and the plants afterwards divided, re-arranged, and planted at regular distances apart, they will give little trouble for the remainder of the year. Among the plants used in this manner are *Vinea major elegantissima*, *Stachys lanata*, and various grasses, variegated and other. Where the pretty *Lonicera flexuosa aurea reticulata* is employed as a margin to large beds of flowering shrubs, the shoots must be regulated and pegged down close to the soil. Should the relaying and mending of the Box-edgings be found necessary, let the work be carried on without delay.

Flowering Shrubs.—The lateral shoots of *Jasminum nudiflorum* as they pass out of flower

should be cut back to the second or third basal bud, and the strong growths necessary for covering unfurnished spaces reserved at almost full length, nailing or tying them. *Chimonanthus fragrans* may be similarly treated, but leaving the shoots with at the most two buds. Sprinkling of an artificial manure on the surface of the ground per square yard at the rate of 2 to 3 ounces, and a mulch of half-decayed stable litter, will stimulate growth in these plants. Trees of *Prunus*, *Pyrus*, *Viburnum*, &c., recently planted, may now have their shoots cut hard back, in order to induce an even break, and the trees afterwards allowed to grow at will, unless symmetrical specimens are thought desirable.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

The Protection of Blossoms.—As soon as the colour of the petals on Apricots and Peaches is observed, some kind of protection is absolutely necessary, if good crops are to be looked for with any degree of certainty, more especially in low situations. The flowers, when kept dry, will withstand several degrees of frost with impunity; but when wet, and frost follows, loss more or less is sure to occur. The young growth, which appears soon after the flowers expand, also stands in need of protection. In some gardens no protection whatever is afforded these trees, but I consider the best policy is to look ahead, as if the foliage, especially that of the Peach, gets badly blistered later on, the young wood is crippled to such an extent that a full crop of fruit is a rare thing. It is not every Apricot and Peach-wall that is furnished, like that at Bicton, with a portable glass coping. The panes of glass in this protector are 2 feet long and 18 inches wide, and are secured in an iron frame having a fall of 9 inches from the top of the wall to the front, and on to this trebled fish-netting is hung, and reaches nearly half-way up the wall, and is secured to stakes placed 4 feet from the foot of the wall. Failing a glass coping of this sort, boards about 18 inches in width may be fixed to brackets. Scrim-canvas, Haythorn's hexagon netting, and similar materials are used; but with all of these the trees have to be uncovered on fine days and when it is not frosty; but in the case of fish-netting, it can remain in position until all danger from frost is at an end.

Pruning.—Stone and other fruit-trees planted in the autumn of 1901 should be pruned early this month. Shoots of standards, pyramids, and bush-trees should, if much growth was made last year, be shortened back to within 6 or 8 inches of the last operation, and shoots not required for extension cut back to a couple of buds. Maiden trees of last year should have the shoot or stem cut back to within four or six buds from the base, and thus lay the foundation of the future crown. Trees planted this year should be left untouched till the autumn. Where Gooseberries and Currants were left unpruned for fear the birds might take the buds, they should be pruned forthwith. All planting operations should be brought to a close as speedily as possible, for should a dry spring and early summer set in, the trees would have little chance of laying hold of the soil, unless much attention was paid them in the matter of affording water, and even then it is seldom that the growth made is satisfactory.

PLANTS UNDER GLASS.

By J. C. TALLACK, Gardener to E. MILLER MUNDY, Esq., Shipley Hall, Derby.

Chrysanthemums.—Many of the early-struck cuttings will now be ready for potting into large 60's, or 3½-inch pots. Previous to this, however, such varieties as require early stopping to induce breaks should be dealt with. Several of the finest varieties require this attention, in order to get them in good form at the exhibition season, and their names are to be found in almost all good catalogues. Turfy loam two-thirds, with decayed horse-

droppings one-third, and some sand, make a suitable mixture for these plants. Pot with a moderate degree of firmness, and place the plants in a light position near the glass in a frame from which frost is excluded, affording no water at the roots for a day or two, but syringing once or twice a day if flagging occurs.

Liliums.—To succeed with *L. longiflorum* var. *Harrisii*, and to provide for any deficiencies in that somewhat erratic variety, the earliest plants of this variety may be brought into an intermediate temperature. Growth should, however, have started before this is done, as any attempt to hurry the bulbs at this date will defeat the object in view. The house in which these Lilies are grown should be well exposed to light, as they do not like shade during the early part of their growing season.

Forced Plants.—The earliest-forced plants are of no use for growing on, but those which flower from now onward are worth keeping if they are afforded shelter under glass till April. A season's rest will bring *Azalea mollis*, *Lilacs*, *Guelldres Rose*, *Staphylea*, &c., round again, so that they may be again forced with good results. Daffodils, and in fact *Narcissi* of all types except perhaps the *Scilly* or *Paper-white*, may be saved for planting under trees, and there are many other such plants that pay for care after forcing.

Seed-sowing.—One need not enumerate the many kinds of plants grown from seeds that should be sown about this time, as the directions printed on seed packets will be quite sufficient to work on; and a little licence may be allowed in accordance with the time in which the various plants so raised are expected to flower, or, in the case of foliage plants, to be at their best for the decorative purposes they are to fill. Personally, I have generally found it best to delay a little beyond the dates as given, i.e., if February and March are given, the first week of the latter month will be quite soon enough, and it is well to remember that seeds germinate stronger and more freely as we emerge from the winter. Large bodies of soil turn sour more quickly than do smaller quantities, so it is not advisable to be too generous in this matter; and another point that should not be forgotten is, that most seeds germinate best in the dark, but must not remain under such conditions after the plants have pushed through the soil, and careful watching is necessary in all the early stages if good results are to be obtained.

Pricking off Seedlings.—Earlier raised seedlings of *Begonias*, *Streptocarpus*, &c., should be pricked off before the soil in the seed-pots gets sour. I advise pricking-off into shallow pans rather than potting-off singly, as the plants do not then require water so frequently, nor are they subject to the sudden changes to which plants in very small pots are liable. It is not necessary to wait until the plants may be easily separated from each other before attending to pricking off; indeed, some appear to do much better when lifted and replanted three or four in a clump. The great thing is to see that the seedlings are quickly transferred from one receptacle to the other, so that there shall be no chance of their becoming withered.

FRUITS UNDER GLASS.

By JAMES WRYTOCK, Gardener to the DUKE OF BUCKLEUCH, Dalkeith.

The Orchard-house.—The woodwork of this house should be thoroughly cleansed with soap and water, and all wall surfaces either painted or lime-washed. The kinds of fruits grown in orchard-houses, particularly in cold districts, are Cherries, Gage Plums, and Pears, which are liable to be infested with scale, and in order to destroy these the following dressing should be applied: in a large vessel of soapy water pour in a half pint of petroleum, and keep the mixture constantly stirred whilst syringing the trees, doing this forthwith, the buds being dormant. In very bad cases the branches may be dressed with XL-All liquid insecticide, using a painter's brush for the purpose. The

repotting of pot-trees requiring more rooting space, should have been carried out in September and October, but when no repotting is called for, let inert surface-soil be renewed, and a top-dressing of turfy loam, mixed with bone-meal and Vine-manure, be applied. The borders should also have the surface-soil removed, and be top-dressed in like manner, so as to induce the formation of numerous surface roots.

Early Muscats.—These Vines, if started at the beginning of the first month of the year, will be now in flower, and it will be necessary to keep the temperature at night at 72°, and by day with sunshine at 90°, but lower in dull weather. There should be just the least possible amount of air afforded, and the viney should be kept slightly moist. When in flower, distribute the pollen with the hand or camel's-hair brush, and if pollen of any other variety is available, convey it to the flowers of the Muscats. The foliage is tender, and more readily injured and scorched than that of other varieties; and when the fruit is set and has begun to swell, more air may be given in favourable weather. Guard against cold cutting winds entering the house, and causing rusting of the berries. The border for early Muscat Vines being inside, should now be afforded a sprinkling of Vine-manure, and a mulch of rotten manure; and if the drainage is all right, water may be applied copiously.

Fig House.—If the early varieties *Pingo de Mel* and *St. John's* are grown, the fruits will now be of a fair size, and the night temperature may be raised to 60°, and 10° higher in the daytime. Keep the air of the house moist, and as the days lengthen and more sunshine obtains, syringe the trees morning and afternoon; and if growing in pots, do not let them get dry at the roots, or the fruit will drop. Those planted out in a border may be afforded water copiously, and occasionally an artificial manure, or weak diluted manure-water from the cowshed. Squeeze the growths with the finger and thumb at the fifth joint to stop them.

THE APIARY.

By EXPERT.

The severe weather will induce the careful bee-master to ascertain the condition of his bees, especially the weak stocks. When his calendar, on referring to it, tells him that number one, two, and four are strong, and have plenty of stores, more harm than good will be done by interfering with them; but as to number three, which is weak, he should raise the corner of the quilt and slip a cake of candy underneath as gently and quietly as possible, and see that the quilt is put again in place—but in no case for the present must the bees be encouraged to breed. A cursory glance might be given to all hives on a bright day to see if the bees have any stores left, but do not disturb them. Wet or mouldy quilts must be replaced with dry ones, and a small quantity of naphthaline put on the quilt and at the back of the hive. The bee-keeper should take as his maxim for a month the old saying, "leave well alone."

To make Bee Candy.—Place a clean pan on the fire, put half a pint of clean water and three pounds of crystallised cane sugar, and stir it till the sugar is dissolved, not allowing it to burn. Boil it for a few seconds, and then cease stirring and let a drop or two fall on a plate, and if this "sets" at once, so that the surface does not stick to the finger when pressed, it is sufficiently boiled; but if sticky, it contains too much water, and either more sugar must be added, or the boiling continued. The right condition being reached, remove it from the fire, and set the pan in cold water to hasten cooling of the mixture, stirring briskly all the while until the mixture begins to turn white or granulate, and become rather stiff, when it may be poured into a mould suitable for the purpose, and lined with paper for easy removal, and to prevent it sticking to the quilts. The candy so made will, when cold, be of such consistency as to become quite soft and buttery when scraped with the finger-nail.

APPOINTMENTS FOR THE MONTH OF MARCH.

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| SATURDAY, MARCH 1 | Royal Botanical Society, Meeting. |
| SUNDAY, MARCH 2 | Chambre Syndicale des Horticulteurs Belges, Meeting at Ghent. |
| TUESDAY, MARCH 4 | Scottish Horticultural Association, Meeting. |
| THURSDAY, MARCH 6 | Linnean Society, Meeting. |
| TUESDAY, MAR. 11 | Royal Horticultural Society, Committees Meeting. |
| WEDNESDAY, MAR. 19 | Torquay Gardeners' Society, Spring Show. Royal Botanical Society, Meeting. |
| THURSDAY, MAR. 21 | Linnean Society, Meeting. |
| FRIDAY, MAR. 21 | Horticultural Show in Manchester Free Trade Hall. |
| TUESDAY, MAR. 25 | Royal Horticultural Society, Committees Meeting. |
| FRIDAY, MAR. 23 | Good Friday. |
| MONDAY, MAR. 31 | Bank Holiday. Jersey Agricultural and Horticultural Society, Exhibition opens. |

SALES FOR THE WEEK.

- MONDAY, MARCH 3.—Azaleas, Begonias, Carnations, Roses, &c., at Protheroe & Morris.
- TUESDAY, MARCH 4.—Sale of the Tixall Collection of Established Orchids, by order of the Exors. of the late E. Bostock, Esq., at Tixall Lodge, Tixall, near Stafford, by Protheroe & Morris, at 12.30.
- WEDNESDAY, MAR. 5.—Important Sale of 750 cases of Japanese Lilies, Davallias, Peonies, Acers, &c., at Protheroe & Morris' Rooms, at 5 o'clock. Continental Plants, Tuberoses, Roses, Greenhouse Plants, &c. at 12.—Ferns and Flowering Plants, Palms and Decorative Plants, Perennials, Lilies, Azaleas, Rhododendrons &c., at Stevens' Rooms, at 12.30.
- FRIDAY, MARCH 7.—Sale of Shrubs and other Stock at The Nurseries, Feltham, by order of Messrs. C. Lee & Son, by Protheroe & Morris, at 12.—Perennials, Carnations, Roses, Hardy Border Plants and Bulbs, at Protheroe & Morris' Rooms.—Imported and Established Orchids, at Protheroe & Morris' Rooms.

TENDER.

Grardians of the Parish of Lameth, Brook Street, Kennington Road—Up-keep of Garden at Norwood. Tenders to be sent in before March 11.

(For further particulars see Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick —41°.

ACTUAL TEMPERATURES:—

LONDON.—February 26 (6 P.M.): Max. 47°; Min. 38°.

February 27.—mild; dull; rainy.

PROVINCES.—February 26 (6 P.M.): Max. 47°, Scilly; Min. 37°, E. Counties.

Use of the Electric Light and of Ether in Forcing Plants. PRACTICAL gardeners have rarely the opportunity of making scientific experiments, and commercial men, in spite of the all-importance of the subject to them, are even less inclined to step beyond the path marked out by routine, unless some immediate benefit is likely to be forthcoming. Experiment stations, then, become more and more necessary, and they should be supported by those who will ultimately benefit from them. Such a one we might have at Chiswick. We do not think there would be any insurmountable difficulty as to funds, or as to a scientific director competent to devise, carry out, and publish the results of experiments likely to benefit practical horticulture. How is it, for instance, that no one in this country has taken up the question of the use of the electric light, or for the matter of that, of artificial light of any kind, for forcing purposes in our dull winters? The evidence obtained some twenty years ago by the late Sir WILLIAM SIEMENS was simply astounding (see *Gard. Chron.*, 1880, April 3, p. 432). Mr. BUCHANAN, the gardener, now in Queensland, was allowed a free hand, and the results in the case of forced Strawberries, Wheat, and other crops

were almost beyond belief, more especially as regards the hastening of the ripening process.

Of course this was an experiment on a limited scale, and the question of expense did not enter into consideration. The houses were there, the apparatus was installed, the extra cost of utilising the light was not material. The results were, however, so extraordinary, that it is a matter for astonishment that no one in this country has continued the experiments, and shown what modifications are necessary to make the use of the electric light, or the incandescent gas light, in forcing a commercial success. The subject is not even mentioned in the recently published gardening manuals to which we have referred. In France more has been done, and still more in America, where the use of the electric light has been proved under certain circumstances commercially advantageous in the case of Lettuce-growing. Prof. BAILEY, in the *Cyclopædia of American Horticulture*, sums up the results that have been obtained in the United States by saying that "the application of the electric light to the growing of plants is a special matter to be used when the climate is abnormally cloudy, or when it is desired to hasten the maturity of crops for a particular date." Now these are just the very conditions which obtain in an ordinary British winter. Prof. BAILEY goes on to say that, "Only in the case of Lettuce has it been proved to be of general commercial importance, and even with Lettuce it is doubtful if it will pay for its cost in climates which are abundantly sunny."

Professor BAILEY writes, under the sunny skies of the States, of the electric light only, and from a commercial standpoint alone. The conditions of British horticulture differ widely, and in many places gas would be cheaper and more efficient than the electric light.

Another means of facilitating forcing operations has lately been made known by one of the professors at a Danish Agricultural School, and which consists in subjecting the plants to the fumes of ether. The plants so exposed shed their leaves, as though they had been subjected to frost. The best results with Lilacs are obtained in late summer. The ether then stops vegetative growth, and a moderate temperature being supplied, the flower-buds quickly expand, so that Lilacs may be had in bloom in the first half of September. M. FRASZ LEDIEX, of the Dresden Botanic Garden, has been experimenting in the same direction, and the results he has obtained are summarised in recent numbers of *Le Jardin*, from which we glean the following particulars:—

For early forcing, says Herr LEDIEX, the action of ether is so important that none who practice forcing on a large scale can afford to dispense with it. Flowers obtained by early forcing naturally command a high price. It should further be considered that fuel is saved by this method (whether the forcing be at a high or a low temperature), and that this economy more than balances the cost of etherisation. The cost per plant works out at rather more than one penny (12 cents.).

1. The varieties of Lilac usually forced in Germany: Marie Legraye, Charles X., and Léon Simon, were in full bloom twenty-eight days after having been brought into the house; Marie Legraye was even earlier in flowering.

2. Various flowering shrubs may be bloomed in much less time than by the usual process. Plants of the same variety not etherised have not bloomed, or have bloomed badly, in the comparative trials, or perhaps some opened their flowers in eight or ten days (according to the variety) after those that were treated with the ether.

3. Etherised plants can be forced at a lower temperature than that which is essential for the blooming of those not etherised.

Besides Lilacs, Herr LEDIEX also made experiments with *Viburnum tomentosum* syn. *plieatum*, *Azalea mollis*, *Prunus triloba*, *Deutzia gracilis*, Lily of the Valley, *Ilyacinth*, Rose, and cut branches of ornamental spring-flowering shrubs. *Azalea mollis* and *Viburnum* did well; *Prunus triloba* was less amenable to the action of the ether; *Deutzia gracilis* failed altogether. Lilies of the Valley etherised and placed in heat on November 21 flowered in the proportion of 40 per cent. on the twenty-first day, while of those not etherised only 2 per cent. flowered, and these in a temperature of 23° C. For late forcing of Lily of the Valley the ether had but little effect, so that it seemed better in that case to keep the plants in the refrigerating apparatus or in cool chambers. For Roses the results were not altogether decisive, although a very marked advance was reported.

Branches of *Azalea mollis* cut and etherised expanded their flowers in twenty-three days, while the buds on branches not treated did not open until twelve days after. The greatest success was with Lilacs, *Viburnum*, and *Azaleas*. *Viburnum plieatum*, though slow to bloom, placed in heat on December 2, was in full bloom about December 14; while those plants not etherised yielded only poor flowers at a much later date.

Azalea mollis submitted to ether on Nov. 26, and brought indoors on the 28th, was covered with flowers on December 20, although the cheek plants only bloomed partially in the beginning of January. The more nearly the normal season of the flowering of the shrubs is approached, the less vigorous is the effect of the ether. The value of etherisation, then, is for early forcing in November and December, when the flowering can be hastened by some two or three weeks.

Plants lifted from the borders without preliminary attention during the summer, flower as normally as if forced in January or February. This, it must be confessed, is an immense advance in the forcing industry.

The application of the treatment is not without certain inconveniences and difficulties at the commencement. The vapour of the ether is inflammable, so that no light must be brought into places where plants are etherised until the vapour has been thoroughly dispersed by ventilation; no fire or light must be allowed anywhere in the neighbourhood of the ether.

There is still some difficulty in administering the ether to ensure perfect volatilisation. The plants should remain plunged in the vapour for a certain time, about forty-eight hours, and this must be in an absolutely air-tight place, to prevent the escape of the vapour. The larger the area, the more precautions should be taken both to concentrate the vapour during the period of etherisation, and to ensure its rapid dispersal after the operation.

For forcing on a large scale, cemented buildings with a door and several ventilators, the interstices of which are hermetically sealed so as to prevent the escape of any ether, are most convenient. The interior arrangement should be such that every corner can be filled with plants, so as not to waste the ether unnecessarily.

Now here, to revert to our plea for an experiment station, is an experiment which could readily be tried at little cost at Chiswick, and if the facts as recorded by our Danish and Saxon friends can be confirmed at Chiswick, that establishment would confer a benefit on horticulture of more permanent value than it does by the present necessarily inadequate trials.

ROYAL GARDENERS' ORPHAN FUND.—In our account on p. 135 of the very satisfactory meeting of the supporters of this Fund, we were compelled to summarise the statement of accounts owing to pressure upon our space. In that summary it is stated that there are balances in hand, on deposit, and at bank of £2,683 10s. 5d., which is really the amount of expenditure for the year, including balances £728 15s. 9d.

LINNEAN SOCIETY.—On the occasion of the evening meeting to be held on Thursday, March 6, 1902, at 8 P.M., the following papers will be read:—1. "On some new Species of Lepididæ in the British Museum (Nat. Hist.)," by Prof. A. GRUVEL. 2. "On the Morphology of the Brain in the Mammalia, with special reference to the Lemurs, recent and extinct," by Dr. G. ELLIOT SMITH.

MR. SELFE LEONARD.—We greatly regret to have to announce the death, on the 21st inst., of Mr. SELFE LEONARD under very distressing circumstances. He was staying at an hotel in Rome and fell down the staircase, sustaining injuries from the effects of which he shortly succumbed. Mr. SELFE LEONARD was an enthusiast in the collection and cultivation of hardy plants, and his garden near Guildford is one of the most noteworthy in this respect in the country.

PRESENTATION.—On Friday, 21st inst., Mr. JAMES NEIGHBOUR, head gardener at Copped Hall, Epping, was the recipient of a handsome marble clock, presented to him on his retirement from his post by the garden staff, and other employes and friends on the Copped Hall estate. Mr. NEIGHBOUR has given faithful service to E. J. WYTHES, Esq., and family, for upwards of forty years, and was much respected by his employer. The presentation was made by Mr. J. FEATHERSTONE, foreman in the gardens at Copped Hall, in the presence of the garden staff and others.

BOSKOOP.—To lovers of hardy trees and shrubs, and of those adapted for forcing purposes, it will be interesting to know that an exhibition of such subjects is to take place at Boskoop, Mar. 22 to 25. When one remembers the profusion of *Mollis Azaleas*, and other flowering plants, which might be collected at Boskoop, one can but anticipate a show of extraordinary beauty. Mr. G. J. DE VINK is the Secretary.

NATIONAL ROSE SOCIETY.—A meeting of the General Purposes Committee will be held at the Rooms of the Horticultural Club, Hotel Windsor, Victoria Street, Westminster, on Wednesday, March 5, at 11.30 A.M. *Edward Mawley, Hon. Sec.*

PRESENTATION TO MR. R. NEWSTEAD.—A crowded audience, representative of all classes of citizens of Chester, filled the Lecture Theatre at the Grosvenor Museum on Wednesday evening, February 5, being attracted thither by two objects: the first, to take part in a presentation to Mr. R. NEWSTEAD, the distinguished and popular curator of the museum, of a handsome timepiece, and a purse of gold, containing £144, spontaneously subscribed for by many admirers as a token of

appreciation of his scientific work; the second, to hear from Mr. NEWSTEAD an interesting lecture, entitled "My Natural History Work." The timepiece bore the following engraved inscription: "Presented to ROBERT NEWSTEAD, A.L.S., F.E.S., and Hon. F.R.H.S., with a purse of guineas, by members of the Chester Society of Natural Science, Literature and Art. February 5, 1902." The chair was taken by Mr. J. D. SIDDALL, who was supported by the Mayor of Chester (Mr. JAMES FROST, who attended specially to make the presentation on behalf of the subscribers). The chairman (Mr. SIDDALL), after a few words of welcome to the Mayor, said Mr. NEWSTEAD's work for the Society was so well known as to hardly need any explanation from him. He was appointed curator when they came into that building. This presentation to Mr. NEWSTEAD came out on the publication by the Ray Society of a monograph by Mr. NEWSTEAD on the scale insects. The question treated in that work was one of very great economic and national importance, and the very fact of Mr. NEWSTEAD's work being chosen for publication by the Ray Society as their annual volume was in itself proof of the importance of the subject, and of the admirable way in which the subject had been treated by Mr. NEWSTEAD. Since the date of that publication, Mr. NEWSTEAD had had the great honour done him by being elected one of the Associates of the Linnean Society. These things, together with Mr. NEWSTEAD's continued kindly work for the museum, had suggested to them the desirability of choosing the present time for making to him some acknowledgment of their indebtedness for his manifold works.

THE LATE SIR HENRY GILBERT.—We learn from *Nature* that, according to the will of Sir HENRY, his portrait, painted by his brother JOSIAH GILBERT, is to be placed in the library of the Sibthorpe Professor of Rural Economy at Oxford. Sir HENRY occupied the Professorship from 1884 to 1899. Dr. DAUBENY held the Professorship for many years, and in more recent times Professor WARINGTON.

SYDNEY BOTANIC GARDENS.—During the month of March the garden was visited by immense numbers of flying-foxes. There must have been many thousands of them, and some of the large trees were quite black with them. Several local sportsmen shot large numbers, and the destructive animals were all killed or flew away in about a week from the first appearance of the swarm. It is many years since the gardens were visited by a plague of these animals.

"CULTURE FORCÉE DES OIGNONS À FLEURS," par JULES RUDOLPH; and **"L'ART DE BOUTURER,"** par ADOLPHE VANDEN HEDE (Librairie and Imprimerie Horticole, 64 bis, Rue de Grenelle, Paris). These two books may be mentioned together, as additions to the library of practical gardening books. Forced bulbs (to use a general term for them) are now so important an industry that any information on the subject is useful. As to the second book, the propagation of plants is also a valuable and interesting subject. The two Manuals are clearly illustrated, and the flowers are not exaggerated, as is too often the case in illustrations of them.

LOTUS ARABICUS.—Messrs. W. R. DUNSTAN and T. H. HENRY contribute to the *Philosophical Transactions*, vol. xciv., p. 515, a paper on the poisonous substance contained in this plant. The Arabs are aware that in the early stages of growth the plant is very poisonous,

though when mature it is used as fodder for cattle. The two investigators above-named found that in the unripe plant a considerable proportion of hydrocyanic acid is developed. In the mature plant no poisonous substance is formed.

"THE FAVOURITE FLOWERS OF JAPAN."—This is a publication from Messrs. L. BOEHMER & Co. (ALFRED UNGER, Proprietor), exporters and nurserymen, 5 and 28, Bluff, Yokohama, Japan. The firm claims to have the only European nursery in Japan, and this book is written by Mrs. UNGER for English readers. It is an account of many of the favourite flowers of the country, interspersed with cultural hints. The book is wonderfully light in weight, bound in Japanese fashion, and printed on native paper. Last, but not least, we must mention the charming and characteristic coloured pictures of Peach-blossoms, Cherry-blossoms, Pæonies, Iris, and other flowers, and the delightful and suggestive little landscapes.

THE CHUSAN PALM.—A correspondent in North Wales sends us some interesting particulars of the life-history of this Palm. The plant was at first grown in a Fern-house attached to the residence of the late N. B. WARD, of Fern-case fame, at Clapham. As it appeared strong and healthy, it was sunk in its pot in the garden during the summer, and taken under shelter in the winter. As it still did well, its next home was in a greenhouse, where it remained for some two or three years, being carefully protected in winter. Finally, its owner moved to Wales, and the plant was transferred to Penmaenmawr, where it found a home in the garden, in a corner where the only protection afforded is that of the surrounding shrubs. It has lived there for years, and is still quite hardy and healthy, and has bloomed in four successive years. The Palm has grown to a height of 10 feet, and continues to flourish in this favoured locality, where, as our correspondent remarks, except for the winds, plants from almost any temperate quarter of the globe would grow.

APPLES FROM THE ANTIPODES.—Respecting the arrivals of fruit cargoes from Australia during the present season, the officials of the Peninsula and Oriental Royal Mail Steamship Company write:—Sailing from Sydney, New South Wales, the *Areudia* sails on the 19th inst., expected in London on April 6; *India* sails March 5, due in London on April 20; the *Oceana* sails March 19, due in London on May 4; *Britannic* sails April 2, due in London on May 20; *Australia* sails April 16, due June 3. The traffic manager of the Orient Royal Mail Steamship Company inform us respecting the arrival in the port of London of their fruit ships that the *Austral* is due to arrive on March 29, the *Ophir* on April 12, the *Omrak* on April 26, the *Oratava* on May 10, and the *Orizaba* on May 26. The manager adds, that should the requirements of the season so demand, there may be an additional steamer or two put on.

CORNISH WINTERS.—The following note appeared in a recent number of the *Western Morning News*, kindly forwarded to us by Mr. FOX:—

"It may interest some of your readers to know that on Sunday last the following plants were flowering in the open air in Falmouth gardens:—*Abutilon vexillarium* variegatum, *Acacia dealbata* and *Iopanthia*, *Anemones*, *Arabis grandiflora*, *Arbutus Unedo*, *Aucuba* male, *Azalea amena*, *Berberis Darwini*, *Beall*, and *japonica*; *Borago officinalis*, *Camellia* white, *Campanula pyramidalis*, *Chimonanthus fragrans*, *Choisya ternata*, *Chrysanthemum segetum* and Japanese in variety; *Cistus*, rose-coloured; *Citron* Madras, *Clematis balearica* and *cirrheosa*; *Cornus mas*, *Correa*,

Coronilla glauca and *viminalis*; *Crocus*, *Cyclamen* *Comm.*, *ibericum*, and *persicum*; *Colletia horrida*, *Cytisus*, *Daphne Laureola* and *Mezereum*; *Eranthis hyemalis*, *Erica carnea* and *mediterranea*; *Escallonia macrantha*, *Eryngium pandanifolium*, *Eupatorium Weinmannianum*, *Euphorbia* *giant*, *Forsythia suspensa*, *Fragaria indica*, *Fuchsia* "Little Dot," &c.; *Garrya elliptica*, *Genista*, *Grevillea rosmarinifolia*, *Pelargonium*, *Helleborus colchicus*, *niger*, *maximus*, *orientalis*, *rubra*, *punctatus*, *trifolius*, and *fetidus*; *Hyacinth Roman*, *Hydrangea hortensis*, *Iberis semper-virens*, *Iris stylosa*, *Jasminum nudiflorum*, *Kerria japonica*, *Kniphofia*, *Lavender*, *Leptospermum scoparium*, *Lithospermum prostratum*, *Lunaria biennis*, *Mandragora officinalis*, *Marguerites*, *Cape Marigold*, *Mediantum* *major*, 10 feet high; *Narcissus minor* *Grand Monarque*, *Henry Irving*, *Paper White*, *Soleil d'Or*, &c.; *Olearia Gunniana*; *Pansies*; *Phlox fruticosa*; *Pittosporum Tobira*; *Polyanthus* in variety; *Primroses*; *Pyrus japonica*, red and white; *Rhododendrons*; *Roses* *Devoniensis*, *Bardon Job*, *Gloire de Dijon*, monthly, &c.; *Ribes fuchsoides*; *Ruscus aculeatus*; *Schizotylis coccinea*; *Saxifraga crassifolia*; *Scabiosa*; *Senecio petasites*; *Snowdrops*; *Stocks*; *Spirea hypericifolia*; *Tussilago fragrans*; *Veronica* in variety; *Viburnum lucidum* and *Tinus*; *Vinca major* and *variegata*; *Violets*; *Virginian Stock*; *Wallflowers*, &c.

"The list is less extensive to-day, but the scarlet berries of *Asparagus deflexus*, *Aucuba japonica*, *Skimmia japonica* and *longifolia*, and seeds of *Magnolia Yulans* *Lennei*, are in brilliant contrast to the snow. H. F., February 12."

"GARDEN NOTES FOR THE COLONIES AND ABROAD."—This publication, by Messrs. JAMES CARTER & Co., High Holborn, would be useful to all emigrants and colonists. It contains an alphabetical list of possessions and countries, with notes on the soil, climate, and suitable crops of each. Indian gardening receives special attention, the pages devoted to monthly work in the hills being particularly valuable. Following this portion of the handbook is a section, also alphabetically arranged, on Vegetables for Abroad, then one on Flowers for Abroad, and on Specialties for Abroad; all calculated to serve as useful guides to those who take with them to foreign lands their love of gardening, and are in entire ignorance as to how to continue their pursuit under the altered circumstances.

THE AGE OF TREES.—The estimation of the age of trees by means of the number of rings visible in the wood is well known to be subject to many exceptions. In a recent number of the *Revue Horticole* it is pointed out that by pinching, or pruning or grafting, a second layer of wood may be formed in one year in a shoot. The explanation given by M. GEIGUARD is that the pinching or other operation brings about a state of rest, less sap is directed to the wound. But when the adjacent buds begin to grow, the afflux of sap is increased, and a fresh zone of wood is the result.

PODOCARPUS CHILINA.—In a supplement to a recent number, that for February 15, we gave a reproduction of a photograph, which was sent to us as representing *Podocarpus andina*. Unfortunately, no specimen was sent with the photograph, so that we were unable to verify the name. *Podocarpus andina* is, as we pointed out, a synonym for *Prumnopitys elegans*. Now, we have before us a specimen from the tree at Penjerriek, and recognise that it is really *Podocarpus chilina*. Of this we have dried specimens from Kew and from the Royal Botanic Garden, Edinburgh. In the latter garden the plant is (or was in 1891) called *P. andina*, so that no doubt the plant is cultivated elsewhere under this wrong name. Looked at in detail, *P. chilina* is very different from *Prumnopitys*, a native of the same country, and the habit is also different. *P. chilina*, the plant represented in our Supplementary illustration, has leaves 8 to 9 cent. long, 6 mill. wide, linear lanceolate, acute, falcate, deep shining green above, paler beneath, tapering at the base into a very short stalk. Beneath the epiderm is a layer of stereome or strengthening cells, and,

in the substance of the leaf, beneath the central bundle, is one large resin canal. The hemistele, or central strand of tissue, is defined by a well-marked bundle-sheath or "endoderm," and is transversely oval in shape. In spite of the deep green colour of the leaf, the central cells of the cortex are destitute of chlorophyll or mesophyll. It is a native of the Andes of Chile, and is hardy in the south of England and Ireland. In VEITCH'S *Manual of the Coniferae*, prepared by Mr. A. H. KENT, in addition to the tree at Penjerriek, fine specimens are noted at Kilma-curragh, co. Wicklow, and at Fota Island, near Cork. M. T. M.

MR. GEORGE WOODWARD.—Many of our readers will share our sympathy with the popular and skilful fruit grower at Barham Court Estate, Maidstone, who has just suffered the loss of a little daughter, aged eleven years, from pneumonia.

THE NATIONAL DAHLIA.—The annual meeting of this society was held in the rooms of the Horticultural Club on Tuesday last, E. Mawley, Esq., in the Chair. The President, officers, and members of committee were re-elected, with the addition of Mr. W. Tulloch and of Mr. Bennett-Poë as a Vice-President. Owing to the unsatisfactory relations with the Crystal Palace Company, the society has, as we have previously announced, determined to hold their show next September in the Drill Hall, under the auspices of the Royal Horticultural Society. The financial statement showed that the society had a credit balance of £1 13s. 2d., but this pleasing result had been obtained by the liberality of some members of the trade who renounced the greater portion of the prize-money due to them. In this way the loss occasioned by the action of the Crystal Palace Company was made good. It was suggested that Lord Ilchester should be asked to become a patron. The report, proposed by Mr. Mawley and seconded by Mr. Jones, was adopted.

THE POPLARS, AVENUE ROAD, REGENT'S PARK.

OUR illustration in the present issue (fig. 44) affords a view of a portion of the Rockery, situated at the end of the pretty garden of Ludwig Mond, Esq., which, for a suburban garden, is most interesting by reason of the successful culture of the Orchids and other plants, and Grapes, attained by his gardener, Mr. J. O. Clarke, and which have been often noted in the *Gardeners' Chronicle*. The garden has some fine trees, and a good stretch of well-kept lawn, which is not cut up in flower-beds, in the manner too often found in suburban gardens. A good view of the general garden was given in the supplement of our issue of April 20, 1901.

The Rockery is thickly planted with old-fashioned flowers, among which a very large number of those mentioned by Shakespeare find a place, and render the arrangement doubly interesting. At the back are rambling Roses, Lilies, and flowering shrubs, all of which lend their part to the floral display in their seasons.

NURSERY NOTES.

MESSRS. R. & G. CUTHBERT.

MORE than a century ago, in the year 1797, James Cuthbert, of Berwick-on-Tweed, established a nursery business at Southgate, in Middlesex. It was a small beginning, but we believe the business has been carried on uninterruptedly until the present time. Less than a year since, there were four generations of George Cuthbert's living at Southgate, but the decease of the great-grandfather, the last surviving son of James Cuthbert, was recorded in the *Gardeners' Chronicle* for August 3 last, in the eighty-sixth year of his age. Since the veteran's death, the little house he

occupied in the nursery has been utilised for enlarging the offices and seed-shop, which has given to the frontage of the premises an increased dignity of appearance.

Camellias have been grown at this nursery for a large number of years. There are now seven houses containing planted-out specimens, some of which are of remarkable size, whilst all are in an excellent and healthy condition. Most of the plants are of the old variety *Alba Plena*, and have been planted sixty or more years. One large specimen, said to be over one hundred years old, measures 16 feet in height and 30 feet through, or 90 feet in circumference; it is well furnished with growths and foliage to the base, and appears covered with buds. No manure other than soot is given to these trees, but a liberal dressing of soot is applied after the flowering stage.

Large specimen plants of *Rhododendron* (*Azalea*) *indicum* varieties, including *Fielder's White*, are cultivated for supplying flowers for cutting; also thousands of Roman *Hya-cinths*, *Narcissus*, *Tulips*, *Ivy-leaf* and other *Pelargoniums*, *Roses*, &c. The old *Primula sinensis alba plena* is largely grown, and a white, single-flowered variety, named *The Bride*, is cultivated for seed purposes, its habit being unusually free-flowering. Altogether, there are about a score of glass-houses, some of which are very old, and roofed with tiny panes of glass, but others have been rebuilt.

The out-of-door stock is contained on about six or seven acres of land in the district, and comprises *Aucuba*, *Laurels*, *Cupressus*, *Cedars*, and other evergreen and deciduous trees and shrubs, especially *Limes*, of which there is a good stock; also flowering trees and shrubs of the species most commonly planted. Another 5 acres has been acquired recently, upon the top of the hill, near to the entrance to Trent Park, and this will be planted with nursery stock.

FORCED TREES AND SHRUBS.

During the last few years this Southgate firm, which now consists of George Cuthbert and his two sons, G. H. Cuthbert and R. J. Cuthbert, has come prominently before the horticultural public, by reason of the exceedingly fine exhibits of forced *Rhododendrons* (*Azaleas*) of the types known in gardens as *mollis*, *sinensis*, *Ghent*, *rustica*, &c., at the Drill Hall and the Temple shows; a photograph of the collection staged at the last Temple show being reproduced as a supplement to this journal on August 17. The public in this country has probably never seen these types of *Rhododendron* shown better than in the glorious and richly coloured groups exhibited by Messrs. Cuthbert, and the firm has thus helped very largely to direct attention to new and most desirable varieties for forcing, and for planting on southern slopes in the garden.

Being informed that the firm intended to exhibit a very large and interesting group of forced plants at the Drill Hall on February 25, we welcomed an opportunity of inspecting them a few days earlier in the glasshouses, this being the primary object of our visit on the 21st inst.

The weather during the last six weeks has not been very helpful in the matter of forcing, whether flowering plants or Vines, but notwithstanding this, by very great care in pushing along this species, and delaying that one, a very representative display of forced shrubs has been obtained for the closing days of February. Every day now marks an advance, there is more daylight, and the possibilities of



FIG. 44.—VIEW IN THE GARDEN OF LUDWIG MOND, ESQ., REGENT'S PARK, LONDON. (SEE P. 146.)

a little sunshine are better, so that before another fortnight has passed the Lilaes and other species that seemed hardly likely to be ready for Tuesday, will be in full flower. Among Rhododendrons that were sufficiently forward were the following: *Mollis* section, *Comte de Quincey*, yellow, shaded with orange; *Comte de Papadopoli*, rosy-red colour, shaded and spotted with orange; *Queen Sophia*, rose; *Chevalier de Reali*, creamy white, spotted orange; *Dr. Reichenbach*, a newer variety, of very pleasing colour, with shades of rose, salmon, and orange; *Elizabeth*, claret-coloured, with silvery sheen; the beautiful variety *Anthony Koster*, and others.

A very large plant of *Daviesii*, a most handsome variety of the Ghent or American section, in a pot 20 inches, in diameter, was just opening its flowers; these are white, with yellow blotch on the upper petal. Seedlings of *R. occidentale* in full flower were very beautiful; the flowers are white, with just a suspicion of pink, and with yellow blotch. They vary considerably in these characteristics, but all are deliciously scented.

Of shrubs there was considerable variety in bloom, and none were handsomer than the standard and bush plants of *Wistaria sinensis*. The standards averaged about 4 feet high, and the bush plants 2½ feet. On one of the latter plants there were fifteen trusses of flowers of delightful colour and fragrance. Gardeners do not force *Wistarias* so commonly as the effective qualities of the plants warrant. It may be that they are known to be difficult, but Messrs. Cuthbert succeed with them well enough even so early. The main consideration is to start them very slowly indeed, refraining from pushing them until the flower-buds show. In default of this the plants hurry along into growth, and produce few flowers or none at all.

Another very desirable plant for forcing is *Cytisus purpureus incarnatus*. The plants we saw were quite dwarf, consisting only of arching sprays a foot or more long, with flowers from all the leaf axils. Naturally, the flowers are purple coloured, but forced ones are only palely tinted.

Then there were the double-flowered *Prunus sinensis* in red and white varieties, *P. triloba*, *Malus floribunda*, and the variety *atrosanguinea*; *Laburnum*, *Magnolia conspicua*, *Deutzia gracilis*, *Erica melanthera*, double-flowering *Cherries*, *Genista Andreana*, *G. fragrans*, and *G. præcox alba*; *Kalmia latifolia*, *Ribes atrosanguineum* (which can be forced into bloom in about a week), the double-flowered *Thorn*, *Staphylea colchica*, *Daphne Genkwa*, with pale lavender-coloured flowers on very slender growths; and *Forsythia suspensa*; also *Pyrus Scheideckeri*, *P. Maulci*, and the much better *P. M. superba*; *P. japonica*, rose, alba, and rubra. There were also five or six varieties of flowering *Peaches* (*Prunus persica*), including *rosæflora*, *sanguinea*, and *alba plena*. All of these are very beautiful, and the snow-white blossoms of that last-named are useful for a variety of purposes. Many of the above-named species are forced as standards as well as bushes, and with a few Japanese Maples which have also been forced into leaf, a very pretty exhibit is likely to be made at the Drill Hall meeting.

SELECTED VARIETIES OF SWEET PEAS.

My attention has been drawn to the selection of Sweet Peas given by Mr. Simpson in your issue of January 11, p. 27. The list there is undoubtedly a very good one, but with your permission I will make an exception to a few of them, and tell your readers why I make the exception.

Captain of the Blues is hardly wanted with *Emily Eckford*; it is a very good variety, rather darker in colour, but I should certainly give the preference to *Navy Blue*. As the best substitute in place of *Chancellor*, I should undoubtedly select *coccinea*, one of the new varieties which went out last season for the first time, and which is undoubtedly the nearest approach to a scarlet that we have yet got. *Chancellor* is in my opinion too near *Lady Mary Currie* to be wanted in a stand of twenty-four distinct varieties; and I should even prefer *Oriental*, as somewhat a darker shade of colour, if *coccinea* were not used. *Duchess of Westminster*, according to all my trials and observations of the last season or two, has been so varied in its character, its markings, and its size, that I should much prefer *Countess of Lathom*, which is somewhat in the same way, but a much more reliable, and in my idea a better flower. *Colonist* I should leave out, for the reason that it is one of the most unreliable flowers I have ever grown, not so much in the size of its blooms as in the variety of its shades of colour, for I think if anyone would grow fifty seeds of *Colonist*, they might without any difficulty select five or six distinct shades of colour from the row when in bloom. I should much prefer the newer variety, *Lord Kenyon*, which in my opinion is the best of this shade of colour after *Prince of Wales*. *Mrs. Dugdale* I hardly think is wanted with *Royal Rose*, and it has an unfortunate habit of becoming very deformed at times in the lower part of the wings. For *Lady Ormesby Gore* I should substitute *Mrs. Eckford*, which, although perhaps not quite so bright in colour, is undoubtedly one of the best Peas in existence as a pale primrose self. *Lady Ormesby Gore* has a tendency to "hood," and is dumpy in the shape, and is certainly not wanted with the *Hon. Mrs. Kenyon*. For *Othello* I should substitute *Black Knight*; the former I look upon as a dull colour as compared to the latter, which is always one of the most telling dark varieties that is exhibited in a stand of twelve, eighteen, or twenty-four, and that was shown pretty well in the Sweet Pea Centenary at the Crystal Palace, for there I find *Othello* was only exhibited thirty-five times, whereas *Black Knight* was exhibited sixty-three. *Black Knight* was in the 1st prize stands on seven different occasions, and *Othello* was only represented in three. *Black Knight* was exhibited in twenty-eight different stands in other provincial shows during that season, as compared to seven of *Othello*.

Your correspondent of February 8 alludes to the fact that I still favour *Prima Donna* before *Lovely*, and I am still of that opinion. *Lovely* has such a tendency to become streaky in the centre of the standard, which in my opinion is a very great defect, whereas *Prima Donna* is a much more constant flower right through, although I find, on referring to the number of exhibits at the Centenary, *Lovely* was certainly shown on more occasions, it being represented in seventy-five stands as against fifty-four; in the provincial shows there was not so much difference, one being shown forty-three times and the other thirty-seven.

As another instance of Mr. Simpson's list, I am rather surprised he has left out *Sadie*

Barpee and put in *Emily Henderson*. There has always been a very great diversity of opinion amongst growers generally as to whether *Sadie Barpee* or *Blanche Barpee* is the better flower, but it has hardly ever been questioned or compared with *Emily Henderson*. *Blanche Barpee*, in my opinion, is the finest white in existence, with its bold, upright standard. *Sadie Barpee* is a very good flower, but unfortunately "saddles" in the standard too much to please me; whereas *Emily Henderson* is a smaller flower in every way, and has a split or heart-shaped standard, which is quite a standard of the past as compared to the flowers which are now looked upon as a standard of what a Sweet Pea ought to be. I find *Sadie Barpee* was exhibited at the Centenary show sixty times, and in the provincial shows thirty-seven times; whereas *Emily Henderson* only appeared thirty-three times at the Centenary and nineteen times in the provincial exhibitions. This, I think, will speak for itself as to its popularity. *R. Sydenham, Birmingham.*

LAW NOTES.

BANKRUPTCY OF WM. JNO. BATHO.

THE first meeting of the creditors interested under the failure of William John Batho, nurseryman, Finchley, was held at the London Bankruptcy Court on Friday last. The statement of affairs filed by the debtor disclosed gross liabilities amounting to £93,155, of which £21,574 15s. 2d. was due to unsecured creditors, the total liabilities expected to rank amounting to £36,390 19s. The assets are estimated to produce £20,456, including the estimated surplus from securities in the hands of fully secured creditors amounting to £18,077 11s. 11d. The net assets after deducting the claims of preferential creditors payable in full amounting to £196 19s. 11d., are returned at £20,259 0s. 1d., thus showing a deficiency of £16,131 18s. 11d.

It appears from the official receiver's report that the debtor has been adjudged bankrupt. The debtor commenced business in December, 1895, and purchased a nursery from Mr. Phippen for £2,500, and taking over a mortgage of about £1,300. It appears that he obtained the purchase-money by way of a gift from an aunt. He is possessed of about 37 acres of freehold land, with water-tower, and of various houses, situate at Finchley. The causes of insolvency are stated to be "insufficiency of capital, and the Vines not being sufficiently developed to permit of their fruiting, and the depression in trade caused by the war and the Queen's death; interest on borrowed money, and heavy insurance premiums." The debtor has been requested to furnish further particulars of the "Loss by speculation in mining shares." The debtor stated on his preliminary examination that he had taken out two life policies in the London Life Association, Ltd., for the sum of £2,500 each, which are mortgaged to Lord Forester and Mrs. Vernon, and further charged to Sir Henry A. White. It appears, however, that there are two further life policies taken out on the same Association, and the Company claims to have a first charge on each policy.

As the debtor was unable to make any offer of composition, Mr. Oscar Berry, chartered accountant, of Monument House, E.C., was appointed trustee of the estate, and to act with a committee of inspection also appointed.

PLANT PORTRAITS.

AQUILEGIA HELENÆ (flabellata × cærulea).—Sepals bluish-violet; broad petals, white, with a deep blue spot at the base. *Gartencell, February 1.*
VITIS VOINIERIANA.—Evergreen climber. *Revue Horticole, February 1.*

PUBLICATIONS RECEIVED.—*Agricultural Bulletin of the Straits and Federated Malay States*, December, 1901. Contents: Timbers of the Malay Peninsula (continued), Para Rubber in the State of Amazonas, Transport of Tropical Fruit, The World's Tea and Coffee Consumption, &c.—*Journal de la Société d'Horticulture du Japon*, December 20, 1901, containing articles (in Japanese) on Narcissus Culture, by S. Taketa; Culture of the Japanese Carrot, by M. Hayashi, &c.

HOME CORRESPONDENCE.

GRAFTING FRUIT-TREES.—As grafting will soon begin, I wish to mention two modes of grafting which I found very successful last year. One requires the stock and graft to be of about the same size; both are cut very sloping, like a fish-splice of a fishing-rod, and made to fit together; a small tie is made in the centre of the cuts, and india-rubber tape, well stretched first, such as is used by engineers for making electrical joints, is wound round the graft and stock, commencing at the bottom, and secured at the upper end with india-rubber solution. As the sun may rot the india-rubber before the union is firm, it is well to fasten bast round the india-rubber loosely. The india-rubber stretches as the graft grows, and when the matting gives way the graft is firm. *Capt. H. Rogers, Hartley, Plymouth.*

FLOWERS WHICH CHANGE COLOUR.—In a recent issue of the *Gardeners' Chronicle*, p. 124, bottom of third column, your contributor, "A Sussex Naturalist," in his interesting notes respecting "Flowers which change colour," says, "There are, moreover, several books which the student can consult." I, and probably many more of your readers, would be much indebted to him if he would kindly, in some future issue of the *Gardeners' Chronicle*, name the books in question. The subject he deals with is a most interesting one, and I should much like to know more about it. *R. B., Wimbledon.*

HARDY PLANTS FOR FORMING DEVICES.—It would appear from an enquiry by "Inquirer" (see p. 120 of the *Gardeners' Chronicle*), that advice is sought concerning device-planting; but it is not easy to suggest plants unless the season for which such things are required is clearly stated. This much is stated in the reply to "Inquirer," who appears to possess an idea for the patriotic "red, white, and blue." Even with the many hardy plants in cultivation, we are still without plants that would be effective in the particular shades of colour required, assuming that it is a floral device that is desired. There are hosts of good hardy plants, many in the colours named, although few that can endure to be pinched and pegged down as in carpet bedding. The very revival of hardy plants years ago was a sort of protest against this method of employing plants. There are hardy plants that may be introduced into any style of gardening, without robbing the plants of their beauty. Among flowering plants none can compare as a bedder with the blue *Lobelia* for dwarf habit or profuse flowering; therefore, where blue is needed, *Lobelia* will have to be used. The blues we find in *Veronica*, in *Campanula*, or the *Gentian*, but plants of spreading habit are, by their habit and free growth, unsuited for the making of devices. There are, however, hardy plants which are of service in general bedding arrangements, and I will give a few of the more prominent. It is, perhaps, in the silver-leaved plants that hardy subjects will shine best, for here we find, in addition to that very old and tried plant, *Cerastium tomentosum*, such things as *Achillea umbellata*, with silver foliage and white flowers; *A. ageratoides* = *Anthemis aizoon*, with white, Daisy-like flowers; *A. Clavennæ*, white-flowered, while the leafage in each is quite distinct. The first and last are readily dealt with in quantity, but *A. ageratoides* is less so. Another fine plant in the same category is *Teucrium Polium*, also known as *T. aureum* from the yellow flower-heads; the leafage of this is very fine, and the plant easily propagated. In this connection I do not forget *Leucophytum Browni*, a useful plant, but not absolutely hardy; and not least among white-leaved subjects is the well known *Antennaria candida*, whose dense, spreading tufts adapt it specially for devices on a small scale. To these may be added *Santolina incana*, a perfectly hardy sub-shrub. In green-leaved subjects, *Achillea tomentosa* and *A. aurea* are

rather alike, but distinct in their flowers; then there are *Veronica repens*, *Mazus pumilio*, *Mentha Pulegium gibraltarium* (not hardy), *Ajuga reptans*, and several "mossy" *Saxifragas*, as, e.g., *S. hypnoides*, and its variety *elegans*, *S. Stansfieldi*, *S. Sternbergi*, and others. Of *Sedums*, a pair of perfect bedding subjects may be found in *S. hispanicum* and its variety *S. h. glaucum*; and still another good plant in *Herniaria aurea*, which has also given a golden sport. In variegated subjects the Golden Thyme, the variegated forms of *Arabis lucida* and *mollis*, the golden-leaved *Stellaria graminea*, the variegated *Veronica gentianoides*, are some of the best. Besides these, there are such well marked plants as *Dactylis elegantissima*, *Chamaepeuce diacantha*, *Centaurea ragnsina* and *compacta*, *Cineraria maritima*, the purple-leaved form of *Ajuga reptans*; and for a large bed or in a damp locality, *Scrophularia nodosa* fol. var. This last will bear pegging down, and the points should be pinched to keep it from flowering. In this way the silver leafage is very fine. A good flowering plant is *Verbena venosa*. In the springtime there is an abundance of flowers on dwarf, verdant carpets; the *Anbrietias*, alpine and setacea varieties of *Phloxes*; *Gentiana acaulis*, *White Arabis*, *Asperula odorata*, and others; but none of these by their natural bearing suggest a more useful sphere by trimming them into well defined or rigid lines. They are far more beautiful naturally grown, and each in turn covered with its wealth of floral beauty. *E. J.* [Our correspondent has given the names of a large number of very useful plants, but "Inquirer" required only red, white, and blue. *Ed.*]

SEVERE WEATHER BY THE SOLWAY.—Not for seven years has there been in this district such a severe storm of frost and snow as the one just gone. The frost of 1895 cut down many tender plants that grow and flourish well along the shores of the Solway. *Buddleias*, *Fuchsias*, *Veronicas* were cut down to within a few inches of the ground. How they may fare this season, as well as others that have since been planted, such as *Hydrangeas*, *Phloxes*, *Eucalyptus*, *Choisyas*, &c., remains to be seen; but till the present month we have escaped the severe weather that prevailed, both north and south of this locality. Between the evening of February 7 and the morning of the 8th, 6 inches of snow fell, and frosts occurred on the 10th, 18°; 11th, 22°; 12th, 21°; 13th, 23°; 14th, 23°; 15th, 16°. As long as the sun allowed the snow to remain on the bushes they were doubtless safe. The *Eucalyptuses* were slightly protected by some branches of Sweet Bay, and except that the tips of their upright growths are a little damaged, they do not seem to have suffered much. It is to be hoped that the others mentioned may not have fared worse, as when the sun had melted the snow they were entirely unprotected. *J. Jeffrey, Kirkcudbright, N.B.*

THE ROYAL HORTICULTURAL SOCIETY.—The announcement of the president at the annual general meeting reported in the *Gardeners' Chronicle*, p. 117, has doubtless given great satisfaction to all the Fellows, especially to those who remember the Society in the bad old times; and the members of the Council are to be congratulated on the wise and straightforward course they have taken. All who are interested in horticulture should give loyal support to the policy that is now being pursued, and every effort should be centred upon the main object, viz., a Central Hall and suitable offices. The question of a new garden can wait, and nothing can be said upon the subject in more appropriate terms than those expressed by the president in his address. In the meantime it is noticeable that the old garden at Chiswick has recently asserted its capabilities in a remarkable way. Let anyone turn to the Report of the Council issued in December, 1901, and a most interesting and valuable paper on Plums will be found. Nothing comparable to it, or so free from trade bias, can be found elsewhere, and the only regret one feels disposed to express is that

the report on Plums was not issued in a separate form. This fruit is second in importance only to the Apple, and the result of the Chiswick trials will be a safe guide to planters throughout Great Britain. Very few varieties failed to fruit, and "good crop," "very good," and "extraordinary crop," are expressions of frequent occurrence in the report. Mr. Wright, the superintendent, and his staff, are entitled to great credit for the successful fruiting of so many varieties of Plums in the old garden under ordinary conditions. *W. Roupell.*

DALKEITH, AND OTHER MATTERS.—The account given of Dalkeith Gardens by "R. H. P.," p. 81, was to me very interesting reading, especially the allusion to the ribbon flower borders along the sides of the broad walk fronting the gardener's house. I think I am not very far wrong if I venture to say that the introduction of the striped-ribbon system of planting a flower-border was first initiated at Trentham, by the late Mr. Fleming, near upon sixty years ago. Be that as it may, I recollect how delighted I was when first I saw it there forty-nine years ago; and more than once have I helped to plant it. I well remember sending a sketch of the border, accompanied by a list of the various things with which it was planted, to the late Mr. Laing, who was then gardener to the Earl of Rosslyn, at Dysart House. Mr. Laing tried a short length of it, which so pleased the Earl that he desired a long border in the kitchen garden to be prepared, so that he could enjoy the effect of it on a more extensive scale. It is refreshing to find that ribbon-borders are not yet altogether written out of existence by the newer school of garden-writers, who must fill their often rather uninteresting books with something. When at Combe I had an opportunity of forming a very fine ribbon-border, longer than the one at Trentham, a portion of which was even carpet-bedded, and well did it look! When the late Mr. Stevens, of Trentham, saw my border, and found it to be longer than his, he went home and took an early opportunity of turning his down. The gardener's house at Dalkeith is a decent enough looking structure, but why should its walls be so completely naked of any representation of plant life? No *Wistaria*, no *Eseallonia*, no *Roses*; not even *Tropæolum speciosum*, which grows so freely, and is so much admired by southern visitors to Scotland. Part of the house too is obscured by what appears to be an ivy-clad brick wall; whilst on the other side there is a naked palisade, also without the semblance of plant-life upon it. Then, as to the glasshouses. From what we have heard from time to time of the grandeur at Dalkeith, we would have expected to have found a very different representation of them. Fig. 29 shows five houses, all of which are in different lengths, widths, and heights; of the person who directed their construction it certainly could not be said of him that he was a man of one idea only. I believe at one time a range of glass was considered to be more pleasingly effective by having a number of breaks in the lengths of its elevation or façade, the fallacy of which is now pretty well exploded, and we are pleased to note the erection of a new vinery, 75 feet long by 20 feet wide. This is encouraging for the new gardener; of the success of which we will hope to be favoured with an account by and by. "R. H. P." gives it as his opinion that an "English-grown Pine-apple is far superior in flavour to some of the imported ones." One often hears this remark, though the truth of it is difficult to appreciate, seeing that the Azore Islands (from which I believe the bulk of our Pine-apples come) are situate something like 1,000 miles further south than we are, enjoy a fair summer, and of course warmer climate; therefore, we would naturally conclude that Pine-apples with such advantages would be superior in flavour—as they are in size—to those grown in this country. It would be interesting to put the matter to proof, by selecting a first-class specimen of home and imported growth, and have their flavour tested by the Fruit Committee of the Royal Horticultural Society, followed by a

short lecture as to how and where the advantages or disadvantages of flavour comes in, in the culture of the fruits respectively of each country. W. Miller, Berkswell, February 10.

PALMS.—I have read with much interest the notes about Santa Barbara, California, and especially that 150 different Palms are grown there in the open. Would Dr. Franceschi give the list of these 150 species, and thereby greatly oblige all interested in cultivating Palms in semi-tropical climates? I have, after years of trial, been able to bring about 100 different (or supposed) species of Palms together growing here in the open. About as many others which I have tried have succumbed, but not always from climatic causes, so that if I could procure such species again I should go on trying them. Very many species may, *a priori*, be supposed to be as hardy as those which prove so here, but I have not been able to obtain them. Dr. U. Dammer thinks that about 300 different species of Palms would live here, and as the climate of Santa Barbara is about the same as this, it would obviously be of great interest to know which are the 150 species already found to be hardy there, and which may be supposed hardy in many other countries with a similar climate. *Ipomoea chrysanthra*, which has not flowered at Santa Barbara, has flowered here, producing middle-sized, pale yellow, rather inconspicuous flowers. I had planted this with many other climbers against my old, not very large house, but after two or three years the growth of *Ipomoea chrysanthra*, and of some others, whose habit of growth was unknown to me, as, for instance, *Coccinia Dinteri* (Naudin), which latter was described and figured by E. André in the *Revue Horticole*, 1900, p. 268, had become so enormous that I was obliged to take them away. In fact, these climbers had to be trimmed every few weeks to prevent them from burying the house altogether with their verdure, which lay in thick masses across the roof. Besides this very luxuriant growth, suitable only over immense buildings or large trees, the creepers had the quality of sucking up all moisture from the soil for a considerable distance around. When a stem was cut, the sap would flow out in a quantity enough to fill a drinking glass. The effect of this great absorption of moisture, and, of course, of that of other elements of food, was to prevent the growth, nay, the very life of any other plant for several yards distance around where they were growing. I should advise everybody to avoid planting such voracious plants near slow-growing or valuable specimens. A. Robertson-Proschowsky, *Parc les Tropiques, Chemin des Grottes, St. Hélène, Nice, Alpes-Maritimes, France*.

EARLINESS OF SNOWDROPS.—I find that a great many plants grow and flower here outside that would not do so in Oxfordshire, among such being Veronicas, Fuchsias, and even the Gum Cistus, which are doing here nicely. They have been planted nearly two years, and have been without any sort of protection. I selected a dry subsoil and well sheltered situation. The great drawback is that everything keeps growing up to Christmas, and then we get a cold time, with wind from the east in March. Fortunately, the garden is well sheltered from that quarter. J. Jeffrey, *St. Mary's Isle, Kirkcudbright*.

WINTER-FLOWERING CARNATIONS.—I am sorry so good a cultivator of Carnations as Mr. Jennings differs from me on the merits of Carnation Mrs. Leopold Rothschild as a winter-flowering variety; and in writing of winter, I will say the months of December and January as being about the worst time for flowering the plants. By having several batches of plants, with timely stopping, flowers come in succession; but there are doubtless many persons who grow but a tenth of the number Mr. Jennings does, and consequently they would not be able to gather so large a quantity of flowers daily in mid-winter. When writing of winter-flowering Carnations, I had

in my mind those varieties that I have found to be constant bloomers, which open their flowers freely in mid-winter, without any system of stopping the plants. The variety Mrs. L. Rothschild forms abundance of side shoots on the flowering stems, a good quality when increase of stock is desired, but if the plants produced a few less of these and more flowers, the value of this fine Carnation would be enhanced. Are there two varieties of Mrs. L. Rothschild? I have grown it with "Franco," but failed to see any difference in them. T. H. Slade, *Devon*.

CRINUM MOOREI AND C. POWELLI ×. — I have been much interested and instructed with your able correspondent's critical remarks on the origin of these plants. By some temporary forgetfulness, I associated Dr. Moore's foreman, Pope, with Mr. Powell, the raiser of *C. Powellii*. I beg to apologise to that gentleman for the inadvertency. I am indebted also to Mr. Gumbleton and Mr. Moore for their lucid information, as well as to the Editor for his historical references, and shall take the earliest opportunity of gratifying myself with a perusal of the articles referred to, and which I had missed reading during absence at various times from England. *C. Moorei*, with its numerous aliases and variations, *Colensoi*, *natalense*, *Makeni*, *Makoyanum*, *ornatum*, *Schmidtii*, &c., as well as the various dates usually given of their introduction, are very misleading. I believe the *Dictionary of Gardening* says introduced in 1874. Mr. Powell saw the plant at Glasnevin thirty-five years ago; I saw it thirty years ago, when a privileged student, in favour of the eminent Director from 1872 till 1877, and at the lectures on "Crossing species and Varieties, &c.," I heard Dr. Moore compliment his foreman by name in connection with raising *C. Moorei* at Glasnevin. Evidently he alluded to raising it from seed, but I understood it to mean a garden hybrid, and by that oversight subsequently associated Mr. Pope with the product of crossing *C. Moorei* and *C. longiflorum*. Perhaps Mr. Moore could say if Mr. Pope was in any way instrumental in procuring the seeds of *C. Moorei* originally, and if he remembers if that foreman had a brother in the Government service in Natal who sent the seeds home; or if its first appearance at Glasnevin preceded the receipt of the sketch made by Bishop Colenso? J. Murison.

TOMATO-DISEASE.—Referring to a note on Tomato-seed in the *Gardeners' Chronicle* of Feb. 22, I should say our gardening friend is quite correct about the selection of Tomato-seed, and to save it from plants grown under cool conditions. I may say that I grow Tomatos all the year round, and I hardly know what it is to have the disease, or any plants go wrong. I simply grow a few plants outdoors, and save just the medium-sized fruits for seed. The most important point is to examine every seed with a lens, and save only those seeds which are free from a black spot which is to be seen on some seeds when taken out of the pulp, which, although it is a tedious job, pays in the end. I once saw a crop of Tomatos, grown from seed saved in this way, a perfect sight, that will never go out of my memory. A. C.

THE CLEANSING OF ORCHIDS.—Mr. Bound seems quite surprised at my calling in question his method of cleansing of Orchids, asserting that I gave a wrong impression to his words. I adhere to my statement that Orchids require a thorough cleaning oftener than at least once a year. No doubt in the pure air of Reigate they do not get so dirty as in the suburbs of large towns; but what would a collection of Orchids look like at the end of a year if they did not get overhauled, the pots, stages, and glass washed, especially the side-lights of the houses, oftener than once a year? and they would certainly do no credit to the man who had charge of them. Mr. Bound assumes that I agree with a monthly sponging; not so, but I would rather advise once a month than a yearly one, where

circumstances allow of its being performed. My contention is, that as soon as plants require cleansing they should be cleansed, even if it is once a month. Mr. Bound emphasises the value of ventilation to Orchids, and it certainly is an excellent thing, but there are times when it cannot be afforded, especially in localities where town fogs abound, carrying with them all sorts of impurities. I agree that Cattleyas do not require so much moisture as the East Indian Orchids, but a certain amount must be afforded in order to keep the air moist, and the air-roots of the plants in a healthy active state. B. Bowyer, *Morton Hall Gardens, Swinderby, Lincs.*

SOCIETIES.

ROYAL HORTICULTURAL.

FEBRUARY 25.—A very interesting display of exhibits was made at a meeting of the committees on Tuesday last at the Drill Hall, Buckingham Gate, Westminster.

THE FLORAL COMMITTEE recommended a First-class Certificate to *Acacia cultriformis*, which was shown as *A. harpophylla*. It is a very pretty species, with peculiar, hatchet-shaped phyllodia. There were groups of forced flowering plants, of Primulas, Cyclamens, hardy plants, &c., to which eleven Medals were awarded.

Orchids were more numerous than on recent occasions, and the ORCHID COMMITTEE recommended First-class Certificates and Awards of Merit.

THE FRUIT AND VEGETABLE COMMITTEE had but little work to get through, and only awarded a few Cultural Commendations to some fine Onions, Seakale, and Asparagus.

In the afternoon, at a meeting presided over by Sir J. T. D. LLEWELYN, Bt., there were about seventy new Fellows elected to the Society, and a LECTURE upon the uses of Nicotine in Horticulture was given by Mr. WILLIAMS.

Floral Committee.

Present: Chas. E. Shea, Esq., in the chair; and Messrs. Chas. T. Drury, H. B. May, George Nicholson, James Walker, R. Dean, J. F. McLeod, John Jennings, J. Hudson, W. Howe, C. R. Fielder, Chas. Dixon, J. Fraser, C. Jeffries, J. A. Nix, Geo. Gordon, R. W. Wallace, E. H. Jenkins, R. C. Notcutt, C. Blick, Geo. Paul, and Ed. Mawley.

Messrs. R. & G. CUTHBERT, Southgate Nurseries, London, N., were awarded a Silver-gilt Flora Medal for a very exhaustive collection of forced flowering trees and shrubs, which, being described upon p. 146, need not be referred to in detail here.

A group of *Lachenalias* in bloom in baskets and pots was shown by Mr. ALLEN CHANDLER, Bunch Lane, Haslemere. The varieties were seedlings, most of them deep yellow-coloured, with little red about them. One in particular had very large flowers of much substance.

Primula obconica was shown in a group from Messrs. J. PEEN & SON, Norwood Road, West Norwood. The seedlings varied in the colour of the flowers, some being of rich pink colour, and others almost white (Bronze Banksian Medal).

MESSRS. WM. CUTHBERT & SON, Highgate, London, N., and Barnet, Herts, had a nice group of *Ericas* and other such plants in full flower. There were *Erica melanthera*, *E. Wilmoreana*, *Epacris* in red, white, and pink varieties; *Boronia megastigma*, and *B. heterophylla*; *Acacia Drummondii*, so useful as small plants in 5-inch pots, &c. (Silver Banksian Medal).

MR. GEORGE MOUNT, of Canterbury, has commenced to exhibit his forced Roses a fortnight earlier than usual, having on Tuesday last the varieties *La France*, *Mrs. Jno. Laing*, *Mrs. Sharman Crawford*, *Madame Gabrielle Luizet*, and *Capt. Hayward* (Silver Banksian Medal).

A variety of *Asparagus*, under the name of *A. plumosus Blampiedi*, was shown by Messrs. BLAMPIED & TAUDÉVIN, La Fosse, St. Marten's, Guernsey. Four plants in 10 inch pots were shown. The variety was obtained from seeds from South Africa, and is said to require 10° less heat than the type, is much freer in growth, and is liked better in the market. The growths develop phyllodia earlier than does the type, and produce an unusual amount of spray, the growth it has made since Christmas being remarkable.

MESSRS. WM. WOOD & SON, LTD., Wood Green, London, exhibited some of their specialties, including a new form of garden syringe and other sprayers, &c.

Prunus (Amygdalus) persica magnifica was finely shown by Messrs. JAS. VEITCH & SONS, 544, King's Road, Chelsea. This is a crimson-flowered Peach, very effective when forced into flower, as Messrs. VEITCH'S plants were. There were forty-eight of them in 7-inch pots, and all were nicely covered with flowers (Silver Banksian Medal). Some fine plants of *Cupressus Lawsoniana* var. *Stewarti*, a very effective golden-leaved variety, as well as forced plants of *Forsythia suspensa*, came from the same source. Also a group of plants of *Cineraria Feltham Beauty*, a distinct variety, with pretty mauve-coloured flowers, having a pleasing branching habit.

The new Rose Mrs. Oliver Ames, a sport from Mrs. Pierrepont Morgan, itself a sport from Madame Cusin, described in these pages on December 28 last, was exhibited by Mr. JOHN MAY, nurseryman, Summit, New Jersey, U.S.A. The flowers had travelled from America, and had been cut from the plants fourteen days, but they were sufficient to show that the variety is a good one (Cultural Commendation, and Vote of Thanks).

Messrs. H. CANNELL & SONS, Swanley, Kent, made a large exhibit of *Primula sinensis* varieties, all of them belonging to "The Lady" strain. Some had dark and others light coloured foliage, and the flowers varied in size and in the degree of notching or fimbriation. Some of the best varieties were Lady Emily Dyke, white; Red Lady, Queen Alexandra, mauve, with white ring around yellow eye; The Lady, white; Salmon Beauty, Princess Eva, white, or very palely tinted; Crimson Beauty, Lady Whitehead, white; and Purple Lady. Messrs. CANNELL had also a group of plants in flower of *Echeveria retusa*, whose reddish-orange-coloured flowers made a very showy display. Messrs. CANNELL also exhibited a dozen large, well-flowered plants of *Cyclamen Snowdrift*, a white-flowered variety, and gathered flowers of their florist's strain of *Primula sinensis* (Silver Flora Medal).

Messrs. HUGH LOW & CO., Bush Hill Park Nurseries, Enfield, showed a group of miscellaneous plants in flower, including *Cyclamens*, *Epacris*, *Rhododendron* (Azalea) *indium* varieties, *Lilacs*, *Ericas*, &c. This exhibit made a very showy display. Messrs. Low also showed some large standard trees of *Acacia ricinifolia*, *A. longifolia*, and *Cytisus racemosus* (Silver Flora Medal).

Messrs. WM. PAUL & SON, Waltham Cross Nurseries, Herts, showed a fine lot of *Camellias* in pots, which were stood along the centre of the hall. They were in capital health, and freely flowered. Upwards of fifty varieties were represented, including the old *alba plena*, still the best white one; *Reine des Fleurs*, red; *Montironi vera*, white; *tricolor Augusta superba*, rich pink, &c. Some pretty seedling varieties with semi-double flowers were shown, of which section Lady McKinnon, scarlet, mottled with white, is one of the finest (Silver-gilt Flora Medal).

Messrs. GEO. JACKMAN & SON, Woking Nursery, Surrey, again exhibited some rock plants and others in boxes, built up to represent a more or less natural environment. *Anemone blanda* was in bloom, also *Puschkinia libanotica*, *Anemone apennina alba*, the pretty little *Saxifraga oppositifolia*, *Iris reticulata*, *Fritillaria aurea*, *F. Moggridgei*, *Tulipa Kauffmanni*, yellow *Polyanthus*, the slender growing *Androsace lactea*, *Primula villosa*, &c.; also larger plants like *Spiraea Thunbergi*, the double-flowered *Arabis*, *Ericas*, &c. (Silver Banksian Medal).

Messrs. BARR & SONS, King Street, Covent Garden, London, exhibited a number of species and varieties of *Snowdrops* in flower, also *Narcissus cyclamineus*, *N. Corbularia*, and forced flowers of *N. princeps*, *N. Horsfieldi*, *N. Golden Spur*, and other varieties, making a very interesting exhibit (Silver Banksian Medal).

Messrs. T. S. WARE, LTD., Hale Farm Nurseries, Feltham, Middlesex, also showed a collection of choice hardy plants in bloom, and were awarded a Silver Banksian Medal.

Messrs. WEEKS & SONS, Bromley, and Beckenham, Kent, showed the "Charteris" Seedling Protector. The contrivance is an adaptation of the well-known practise of using thread to scare birds from plants, and would be useful for the protection of *Crocuses*, *Primroses*, *Carnations*, &c., from the ubiquitous sparrow.

FIRST-CLASS CERTIFICATE.

Acacia cultiformis.—Some sprays of *Acacia*, shown by Mrs. DENISON, Little Gaddesden, Berkhamsted (gr. Mr. A. G. Gentle), under the name of *A. harpophylla*, proved to be *A. cultiformis*, and was awarded a First class Certificate. It is a very distinct and pretty species, having phyllodia resembling the blade of a chopper one-third of an inch long, ending in an acute

point or hook. The flowers are yellow, and are borne upon axillary or terminal racemes. We were informed that the plant had been cultivated in a pot for twenty years, but had not flowered until last year, due probably to the plant having been removed from the pot and planted out.

Orchid Committee.

Present: Norman C. Cookson, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshaw, R. Brooman-White, J. Charlesworth, J. Douglas, A. Hilslop, H. T. Pitt, H. J. Chapman, J. Cypher, W. Boxall, W. A. Birney, F. A. Rehder, H. A. Tracy, and W. H. White. The weather being mild, a fine display of Orchids was made, both groups and new and rare plants being well represented.

In the former class, Messrs. SANDER & SONS, St. Albans, secured the highest award, a Silver-gilt Flora Medal, for an exceptionally fine group in which the forms of *Lycaste Skinneri* were remarkable, no fewer than twelve fine plants of the best variety of *Lycaste Skinneri alba* being among them. *Lycaste Skinneri* "Baroness Schroder" is a finely-formed flower, white, with a delicate flush of pink, and light rose markings on the petals. Among new or rare Orchids represented were *Cymbidium* × *Wiganianum* (*eburneum* × *Tracyanum*), a cream-white flower marked with purple on the lip, which partook of the form of *C. Tracyanum*; *Miltania* × *Bleuana*, a good form; *Zygopetalum* × *cristato-Gautieri*, a pretty hybrid, the lip of which was white and violet; *Masdevallia Schroderiana*, with many flowers; a singularly-freckled *Mormodes* not yet determined; a fine *Laelia Jongheana*, and various other remarkable novelties, several of which are enumerated in the list of Awards.

Sir TREVOR LAWRENCE, Bart., Burford (gr. Mr. W. H. White), was awarded a Silver Banksian Medal for a select group of remarkably finely-grown rare Orchids. In the centre was a fine plant of the rare *Dendrobium Treacherianum*, bearing nine large rose and claret-coloured flowers on one spike; *Cypripedium* × *Miss Louisa Fowler*, Burford variety, a very strongly grown example; the delicately tinted *C. × hirsuto-Sallieri*, with several fine flowers; *C. × argo-Morganiae*; the singular *Maxillaria arachnites*, profusely bloomed; *Masdevallia burfordiense*, with fleshy claret-coloured flowers, closely lying on the surface of the moss; the rich Indian red *M. × Bocking* hybrid; *M. Gargantua*, with very large purple and yellow flowers; *Laelia anceps Veitchiana*; *Dendrobium nobile burfordiense*, with the lateral sepals bearing purple colour, as in the lip; *D. × xanthocentrum pallens*, a model flower; and the new *Cypripedium* × *Berkeleyanum* (*bellatulum* × *Boxalli*), a distinct novelty, in which both parents appear. The upper sepal was greenish-white, marked with dark chocolate; petals broad, curved forward, cream-white, spotted and veined with dark purple.

Captain HOLFORD, Westonbirt (Orchid grower, Mr. Alexander), staged a group in which were a singular primrose-yellow tinted *Odontoglossum crispum*, another with blotched sepals, *Cattleya Trianaei* Westonbirt variety, *C. T.* allied to "Eboracensis," and several other good *C. Trianaei*; *Cypripedium villosum* Westonbirt variety, *C. × Calypso*, and the richly-coloured *C. × C. Oakwood* variety; a cut inflorescence of a noble hybrid, a fine improvement on *C. × A. de Lairese* (*Curtisii* × *Rothschildianum*), *Dendrobium* × *Leechianum roseum*, &c. (Silver Banksian Medal).

J. COLMAN, Esq., Gatton Park, Reigate (gr. Mr. W. P. Bound), was awarded a Silver Flora Medal for a very effective group of well-grown and profusely-flowered showy Orchids, among which the *Dendrobiums* were prominent. The centre was a fine specimen of the light coloured *D. nobile* Gatton Park variety. Around it were *D. n. nobilius*, *D. n. Cooksoni*, *D. n. elegans*, *D. n. delicatum*, *D. × Cybele giganteum*, a fine plant of the yellow, fragrant *D. aureum*, *D. × Juno*, and other *Dendrobies*; *Phaius* × *Norman*, and another white and purple hybrid *Phaius*; the purple *Masdevallia cucullata*, the scarlet *Epiphronitis* × *Veitchi*, *Odontoglossum crispum* varieties, *Cattleya Trianaei alba*, a finely-grown *Phalenopsis Schilleriana*, with a strong spike, the old one of last year bearing a strong plant; *Cypripedium* × *Winnianum*, *Laelia anceps Stella*, *L. a. Sanderiana*, and the massive white *L. anceps Waddoniensis*, &c.

Mr. J. CYPER, Cheltenham, received a Silver Flora Medal for a very showy and well arranged group of fine *Dendrobiums*, grown and flowered in the excellent manner for which the firm has a reputation. In the group among others were *Dendrobium* × *Ainsworthi* Cypher's variety, *D. × A. roseum*, *D. × splendidissimum grandiflorum*, and the still finer *D. s. magnificum*, *D. × Leechianum*, *D. × Virgil*, and others of that fine type; *D. × Cybele*, *D. × Aurora*, *D. nobile nobilius*, *D. n.*

Cooksoni, *D. n. giganteum*, and a very pretty white form with a rose centre of the class of *D. n. Murraianum*.

Messrs. CHARLESWORTH & CO., staged a group in which were two fine pans of *Odontoglossum cirrosum*, with many spikes, plants which they grow to perfection. In the centre was a healthy plant of the still rare blush-tinted, fringed-lipped *Laelio-Cattleya* × *Digby-ao-Messie*, Heaton variety. The disc of the lip was of a peculiar greenish-yellow, and there were some red markings at the base of the lip, and one in front, which will probably develop as the plant gains strength. Another showy hybrid which previously gained an award was *Laelio-Cattleya* × *Sunray* (*L. cinabarina* × *C. superba*), now shown with six bright orange-red flowers with ruby-red lips; and a pan of *Laelia* × *Coronet* (*harpophylla* × *cinabarina*) showed the plant intermediate in character, but the flowers approached *L. harpophylla* very closely. Messrs. CHARLESWORTH also showed two good varieties of *Laelia* × *Mrs. M. Gratrix*.

H. F. SIMONDS, Esq., Woodthorpe, Beckenham (gr. Mr. Geo. Day), showed *Odontoglossum* × *Adrianæ* Mrs. Simonds, pale yellow, with a few dark spots.

GEO. SINGER, Esq., Coundon Court, Coventry (gr. Mr. Collier), showed *Cypripedium* × *Coundonensis* (*Leeanum* × ?), a massive flower, with strong indication of *C. × Lecanum*, but heavily spotted on the broad petals. W. C. WALKER, Esq., Winchmore Hill (gr. Mr. G. Cragg), showed *Odontoglossum crispum* Avicé, a rose-tinted flower of the best type.

FRED HARDY, Esq., Ashton-on-Mersey (gr. Mr. Stafford), showed flowers of three hybrid *Cypripediums*.

R. G. THWAITES, Esq., Streatham (gr. Mr. Black), sent *Dendrobium* × *Wiganianum album* (*nobile albidiflorum* × *Hildebrandi*), a pretty white form, very free flowering. D. M. GRIMSDALE, Esq., Uxbridge (gr. Mr. T. A. Hooker), sent *Cypripedium villosum*, Kent Lodge variety, a large bold flower. MALCOLM S. COOKE, Esq., Kingston Hill (gr. Mr. Buckell), sent *Odontoglossum Rossii* "Cooke's variety," a fine large flower.

R. I. MEASURES, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. J. Chapman), sent *Cypripedium* × *Argo-Athurianum*, a finely spotted flower.

Awards.

FIRST-CLASS CERTIFICATE.

Zygo-Colax × *Wiganianus superbus* (*Z. intermedium* × *C. jugosus*), from Messrs. SANDER & SONS.—A magnificent hybrid, and a substantial advance on the original form, although the plant is still small. Flowers much larger than the original, broad in all its parts, and of thick substance. Sepals and petals pale green, closely marked with chocolate-purple, confluent blotches, forming bars across each segment. Lip broad, white heavily marked with violet-blue. A remarkable and attractive flower.

AWARDS OF MERIT.

Cypripedium × *A. Dinmock* (× *Godseffianum* × *Drurii*) from Messrs. SANDER & SONS, St. Albans.—A very distinct novelty, unlike any other in the now numerous group of *Cypripediums*, but nearest to *C. × Winnianum* (*villosum* × *Drurii*). The fine flower of wax like substance, the petals bent forward after the manner of *C. Drurii*; upper sepal green at the base, spotted with dark purple, a broad band of the nearly black hue running up the middle; central area of the dorsal sepal flushed with rose, the upper part white; petals and lip yellow, the former spotted, and the latter tinged with purple-brown.

Laelio-Cattleya × *Choleliana* (*Laelia superbiens* × *Cattleya Mossie*), from Messrs. SANDER & SONS, and Messrs. HUGH LOW & CO.—A fine cross, in which the raisers have succeeded in enlarging the flower of *Laelia superbiens* to *Cattleya*-like proportions, and reducing the ungainly length of the inflorescence. Flower as large as *Cattleya labiata*, but narrower in the segments. Sepals and petals light rosy-lilac. Lip dark rose, with yellow disc, and some dark lines on the inside of the side lobes.

Odontoglossum × *L. ochristense Enfieldense*, from Messrs. HUGH LOW & CO., Bush Hill Park.—A very finely-formed variety of the natural hybrid between *O. triumphans* and *O. crispum*. All the segments almost equally broad. Sepals and petals bright canary-yellow, the petals having the inner halves white, the sepals large, with reddish blotches.

Phaio-Calanthe × *Ruby* (*P. Sanderianus* × *Calanthe* × *Oakwood Ruby*), from NORMAN C. COOKSON, Esq., Oakwood, Wylam (gr. Mr. Wm. Murray).—A really showy *Phaio-Calanthe*, partaking much of the blood-red tint of the phenomenal *Calanthe* × *Oakwood Ruby*, one of Mr. Cookson's best. Spike with many flowers of good size; sepals and petals rosy-lilac,

whitish at the back; lip large and openly displayed, of a deep purple colour, with some darker lines on the crest.

Odontoglossum crispum "Mabel Whateley," from H. WHATELEY, Esq., Priory Lawn, Kenilworth (gr., Mr. Cook).—A blotched form of the best type, and considering the small size and poor condition of the plant, likely to develop into a remarkable variety. All the segments broad; the reverse of the sepals heavily blotched and tinged with purple, which shows through in some degree to the surface, which also bear several bright red-brown blotches. Petals white, with a large irregular red-brown blotch extending nearly across the middle; lip white, with yellow crest, and some dark blotches.

Cypripedium × *Felicity* (? *callosum* × *tonsum*), from H. T. PITT, Esq., Stamford Hill (gr., Mr. Thurgood).—A charming and delicately tinted flower. Upper sepal pale green at the base, with emerald-green lines running into the middle area of pale lilac; tip white. Petals and lip greenish, slightly tinged and veined with rose.

Cypripedium × *Dowlerianum* (*insigne punctatum* violaceum × *Godefroye leucophilum*), from W. M. APPLETON, Esq., Weston-super-Mare. Flower of the yellowish white of *C. G. leucophilum*, but larger and more rounded, and beautifully marked with dark purple.

CULTURAL COMMENDATION.

To Mr. Duncan, gr. to C. J. LUCAS, Esq., Warham Court, Harsham, for three well-flowered plants of *Odontoglossum coronarium brevifolium*.

To Mr. Seaman, gr. to G. TAYLOR, Esq., Margery Hall, Reigate, for a fine specimen of *Dendrobium speciosum* with ten spikes, each from 1 to 2 feet in length.

Fruit and Vegetable Committee.

Present: A. H. Pearson, Esq. (in the Chair); and Messrs. Jas. H. Veitch, W. Poupart, Geo. Wythes, J. Willard, J. Jaques, James Smith, C. G. Nix, Ed. Beckett, W. Pope, M. Gleeson, George Kelf, H. J. Wright, Alex. Dean, S. Mortimer, H. Eslinges, and Jos. Cheal.

Six very fine bulbs of Cranston's Excelsior Onion were shown by WYNDHAM PORTER, Esq., Malshanger Park, Basingstoke (gr., Mr. N. Kneller). A Cultural Commendation was recommended.

Messrs. W. POUPART & SONS, Twickenham, obtained two Cultural Commendations. One of these was for some first-rate forced Asparagus, and the other for equally good Seakale.

Varieties of Apples were submitted by Mr. W. SANDERSON, Kirkby Laythorpe, Sleaford; J. VALE, Esq., Cullis, Orleton, Hereford; the Duke of RICHMOND AND GORDON, Goodwood, Chichester; and Messrs. W. B. ROWE & SON, Worcester. None of them were thought to possess exceptional merit.

The Lecture.

NICOTINE IN HORTICULTURE.

The afternoon lecture was one by Mr. G. E. Williams upon "The Use and Value of Nicotine in Horticulture." The lecturer, after describing that nicotine was an alkaloid present in the Tobacco-plant, said that in boiling the leaf of the plant, unless this was done in a vacuum, the nicotine would become oxidised, and consequently another substance would be formed. Very great care was needed to prevent this oxidation taking place.

There were other substances that were equally destructive to insect life, such as carbolic acid, sulphate of copper, and weak solutions of mineral acids, but they were more or less injurious to plant life; quassia-liquor was doubtless of use in the destruction of some pests, but it did not answer perfectly in all cases.

Nicotine was the most perfect of all insecticides. It had been proved to be absolutely harmless to all forms of vegetable life, though a deadly poison to insect and animal life, whether red-spider, aphides, mealy bug, or scale. Experiments had been made to ascertain whether or not nicotine was of use as a disinfectant against microbes. Microbes (which the lecturer described as being organisms between the vegetable and animal worlds) of small-pox, anthrax, typhoid, &c., were cultivated in Agar (a gelatinous substance) in jars, and the vapour of pure nicotine was caused to pass through the jelly for forty-eight hours. It was afterwards found that the microbes were not merely alive, but that they possessed the power to reproduce themselves as before, finally proving that nicotine had no effect upon microbes. A good disinfectant was not necessarily an insecticide, nor vice versa.

There were three ways or methods in which nicotine might be applied to plants for the purpose of cleansing them from insect pests. The first and principal method was that of applying heat to the nicotine, and so

vaporising the atmosphere of the house in which the plants were contained; 2nd, by direct application of the nicotine to the plants themselves; and 3rd, by mixing nicotine with a fibrous material, and burning it in the house, or by burning the leaves themselves. Mr. Williams strongly deprecated this method, as inefficient, and dangerous to the plants. When nicotine was brought into direct contact with fire, it was destroyed, and another substance formed, that, unlike nicotine, affected vegetable life injuriously. He said he had seen the bad results of such a method in the Channel Islands, where Tobacco-leaf, being duty-free, was burned in the Tomato, Cucumber, and other houses.

In adopting the first-named and best method, that of vaporising, it was necessary to bear in mind—

(1) That the boiling-point of nicotine is 250° Cent., whilst that of water is only 100° Cent.

(2) That the less heat applied, the more potent would be the vapour.

(3) That it is necessary that the vapour be given off very rapidly.

To meet these difficulties the nicotine is mixed with alcohol, which, being exceedingly volatile, is given off upon the application of little heat, and in rising takes into the air a considerable amount of the slow-boiling nicotine with which it is incorporated. Such fumigating compounds as this had been manufactured for use by horticulturists, and 1 oz. was sufficient to vaporise 1,000 cubic feet of air.

In reference to the method No. 2, by which the nicotine is applied directly to the plant, Mr. Williams explained that it is usual to mix it with a substance that will help to make it stick to the leaves of the plants; it is then much diluted, and applied by a syringe or sprayer. This method was useful when individual plants required treatment, and it was not necessary to treat the whole house.

In conclusion, Mr. Williams protested against the action of the Pharmaceutical Society in restraining persons other than the manufacturer and chemists from selling poisonous compounds of this nature, declaring that the seedsman should be permitted to sell them if he kept a register of the persons who purchased quantities from him.

ENQUIRY.

BOOK ON LUPINS.—Will some of our readers kindly recommend "W. G. T." an inexpensive book on the culture of Lupins, and the name and address of the publishers?

ANSWERS TO CORRESPONDENTS.

ARUM: J. W. M. Will you kindly send us spathe and leaf when developed, for identification.

ASPIDISTRA: Mrs. Swanton. It is as we feared. The plants are grown too warm in late autumn and winter, with the result that the leaves are thin, and the stalks rather attenuated. The plants cannot grow all the year round and be healthy. The autumn and winter temperature ought not to exceed 45°, and they will grow all the more vigorously in the summer from this enforced rest in those seasons; in fact, the plants may be afforded bottom-heat of 75° to 80°, and top-heat 10° to 15° higher whilst making their growth in early summer, but it is not necessary. When resting but little water is needed.

BOOKS: F. Voules. Williams' *Select Ferns and Lycopods*, to be obtained of the publisher, Victoria and Paradise Nurseries, Upper Holloway.

BRIAR CUTTINGS: T. H. These can be inserted in sandy soil, pressed firmly about them, in the season October 1 to February 28. Make them about a foot long, from hard, well-ripened shoots, taken with a thin heel of the older wood. If you want only a few, layer the points of the shoots in the soil around the mother-plant.

CORRECTION: In the article on winter-flowering Carnations, p. 124, for Deutsche Brandt, read Deutsche Braut.—SPRAYING FRUIT-TREES: Mr. Mayne is desirous of explaining that it was owing to a slip of the pen he mentioned the name of Stott instead of Strawson; see his Calendar, p. 124, in the last issue.

CYCLAMEN, &c.: *Inquisitor*. The plants have been potted in the right kind of compost,

but the cultivation has been at fault. Presumably the house has been kept too warm, the ventilation has been insufficient, and the plants have suffered from being crowded together, and placed at a considerable distance from the roof-glass. It should not be difficult for you to alter all that this year. If the whole of the young Cyclamens are drawn in the leaf-stalk like the one sent, a rather cooler and more airy treatment on a shelf close to the glass in a low pit, and one or two small shifts afforded the plants whilst growth is most active, should result in a more stocky growth of leaves in the future, and a plentiful set of flower in late autumn. Guard carefully against crowding the plants together, or with others. If the tubers of the older Cyclamens are kept, it should be in cold frames, and they should be afforded a rest when the leaves begin to decay, not entirely withholding water from them; or you might plant them in beds of peat, or some prepared light soil in the open air, putting them into pots at the end of the month of August; and if properly treated, they would afford a quantity of bloom late in the winter. The *Richardia* plant is strong, but it is much drawn as if by warmth, and lack of air. The tubers will be all right another year.

GRUBS: *Trouble*. "Leather Jackets," the larvae of the Daddy Longlegs. If you could turn up the soil between the rows occasionally, and pen some fowls on the plantation, and hunt for the grubs in the soil close up to the plants, their numbers would be greatly reduced.

GUMMINESS AND DISCOLORATION OF THE LEAVES OF CAMELIAS: J. P. The gummy coating is due to the excrements of aphids; and the black spots to a superficial mould. The remedy in each case is soap and water applied with a bit of sponge.

IMPROVING GRASS LAND: A. H. Loam four-sixths, wood-ashes two-sixths, preferably those from young shoots and small branches, and bush prunings. Apply the dressing by spreading it with a shovel, and do not apply it deeper than ½-inch. An excess of wood-ashes is injurious.

NAMES OF PLANTS: *Constant Reader*. *Lachenalia luteola*.—W. P., Lancaster. *Cattleya labiata Trianaei*. The abnormal development of the lip is interesting, but such is not an uncommon occurrence.—*Froggatt*. *Liparis longipes*, a pretty little species often imported with other plants from India.—J. L. 1, *Odontoglossum blandum*; 2, *Odontoglossum Lindleyanum*; 3, *Odontoglossum Pescatorei*.—*Mendeli*. *Dendrobium nobile*, a good form. *Habenaria Susannae*. It is deciduous, and requires to be kept cooler and dry for a time after the leaves die off.—J. M., Clifton. Both varieties of *Cattleya Trianaei*; No. 1 a very good form of it.—W. C. S. *Laelia alba*.—J. T., Dartford. 1, *Laelia anceps Sanderiana*; 2, *Dendrobium speciosum*.—R. R. 1, 2, and 3, varieties of *Odontoglossum* × *lanceans*, commonly called *Andersonianum*, 5 inclining towards *O. crispum*, and 2 towards *O. gloriosum*; 3, *O. luteo-purpureum sepiatum*; 4, *O. odoratum*; 6, *O. crispum*.—C. Jones. 1, Common single-flowered Daffodil; 2, *Spiraea Thunbergii*.

RHUBARB ELFORD: T. H. Not known to us.

WATER-GLASS: E. P. Water-glass, silicate of potash, may be bought at most chemists' shops.

WORKMEN'S COMPENSATION ACT: J. H. H. If contributory negligence could be proved on the part of the employer, he would be liable, not otherwise.

COMMUNICATIONS RECEIVED.—The Photogram, Ltd.—Ed. Mawley—J. A.—Caspig—E. H. J.—W. J. B.—J. J. de V.—Boskoop—J. D. S.—Baltimore—G. B.—K. F.—Falmouth—S. & S.—E. D. T.—W. B. H.—H. N.—J. H.—C. P.—E. M. W.—T. H. S.—W. W.—J. H.—Grapes—H. C.—E. M.—A. Savage—*Liverpool Journal of Commerce*—F. M.—Dr. R.—E. J.—H. W. W.—E. C.—C. L. R.—W. A.—G. B. M.—H. M.—K. M. E.—E. M.—J. R. J.—M. M.—J. W.—W. S.—A. C.—G. R.—C. W. D.—J. G.—F. W. C.—C. J.—C. B.—H. W.

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

SUPPLEMENT TO THE "GARDENERS' CHRONICLE," MARCH 1, 1902.



LATANIA AUREA, A PALM FROM RODRIGUEZ.

THE

Gardeners' Chronicle

No. 793.—SATURDAY, MARCH 8, 1902.

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THE SCILLY ISLANDS FLOWER HARVEST.

JUST at the entrance to the two channels, where the currents meet, and the sea runs highest, lie those forty tiny, storm-swept Scilly Islands, of which only five are inhabited. The remainder are resting-places for countless flocks of sea and land birds. Being right in the track of our principal shipping, this rock-bound archipelago forms a veritable death-trap to the unwary mariner, as the graveyards only too plainly show; and yet, withal, they are so mild of climate, that just when vegetation is at its lowest ebb in the other parts of Great Britain, the air is redolent with the delightful fragrance of plants and flowers, and the fields are full of lovely various-hued Narcissi. From Christmas until after Easter, practically the whole archipelago is converted into a huge flower garden; dazzling in its brilliancy, and producing an average of over 10 tons of flowers daily, for the first three or four months of the year. This is the more remarkable when it is remembered that in the five inhabited islands there are only about 3,000 acres of land, and that much of this is rocky and barren. The soil is, however, very fertile, and this combined with an exceptionally mild climate, enables the Scillonians to gather two crops of flowers per week from the same area. The great and varied genus of *Narcissus* supplies the

chief products; nearly 200 varieties are cultivated, some of which are said to be indigenous to the islands. These reach the London and other markets sooner than those from the South of France, and are consequently in better condition.

Every available man, woman, and child is pressed into service during the season, and though small their numbers (under 2,000 all told), they manage to cut, sort, pack, and despatch from twenty to thirty-five tons of flowers every alternate day. This shipping on alternate days prevents the overstocking of the markets, and better prices are the result. 200,000 packages, totalling about 1,000 tons, are as nearly as possible the season's shipments. They are taken from Scilly to Penzance, a distance of about forty-three miles, by steam-packet, thence by rail to the various markets (see fig. 46, p. 155).

The prevailing winds are south and south-west, frost and snow being practically unknown, but southerly gales are frequent, and are sometimes of such severity as to prevent the steamer from putting to sea for as long as a week; this of course seriously interrupts the trade. During exceptionally strong gales the sea has been known to rush into St. Mary's (the most important island) on one side and dashing through the streets of the little town find an exit on the other. But, in spite of these storms, the temperature is wonderfully uniform all the year round. In winter the influence of the Gulf Stream, which envelops these quaint little isles, is so strong that the temperature very rarely falls below 45°, whilst the splendid ocean breezes of the summer time prevents its rising above 60°. It is indubitably the most uniform in temperature of any place in the United Kingdom, and surpasses in equability many of the more popular continental spas and winter resorts. Practically winter is unknown, for mild autumnal weather is experienced until Christmas, when spring sets in, and flowers being to bloom in the open. On account of this, these interesting little islands, within a few hours journey of London, should prove an ideal abode for invalids and others desirous of escaping the cold and fog of our winter season. The mildness of the climate is indicated by the field culture of *Richardia* (see fig. 45, p. 154).

The islands are held under lease from the Crown, and the proprietor is little short of a king to the people. His residence at Treseo is a fine old abbey homestead, which is supposed to have originally belonged to the Benedictine monks of Tavistock, even prior to the Norman Conquest. The abbey gardens, which are open to visitors, afford a treat not to be missed; tropical and sub-tropical, and the most delicate hot-house plants are healthy and vigorous in the open air all the year round. These gardens are beautifully laid out in sections; one plot is known as "The Wilderness," this contains Ferns from all parts of the world, not excluding Australia and New Zealand. Another portion is called "Lower Australia"; another "Higher Australia," &c., each plot containing exotics indigenous to the different parts of the world which they represent. [Illustrations of these gardens, and of the vegetation of the islands, have been from time to time given in our columns.]

There are many foreign plants there which are noted as being the only ones of

their kind to flower out-of-doors in the British Isles. There are Palms, Ferns, Prickly Pears, Aloes, Fuchsias, Azaleas, and many others too numerous to specify, but all contrasting finely with the many varieties of the beautiful, sweet-smelling *Narcissus*. The air is laden with delightful fragrance, whilst the eye is charmed by the beauty of the scene.

There is, however, another story to be told in connection with Scilly; a sad and terrible tale of suffering and death, which began with the advent of navigation, and has continued right down through the centuries to the present time, for in spite of lighthouse, fog-signals, and an ever-vigilant coast-guard force, many terrible shipwrecks with great loss of life have occurred from time to time round these rocky coasts. Ample proof of this may be seen at the entrance to the Abbey Gardens in the shape of a garden-house, known as the "Hall of Departed Spirits." This curious building is decorated with a large number of figure-heads, anchors, and other relics of the many ill-fated vessels which have been wrecked in the vicinity. The ceiling and spaces between the figures are filled with innumerable shells of many kinds, which give the building a very pretty appearance.

It will be remembered that Sir Cloudesley Shovel and his fleet were wrecked on the Scillies after the capture of Gibraltar in 1707; and there is a legend in connection therewith which is worth recounting. One of the crew of the Admiral's ship, the *Association*, was a Cornishman, and knowing the coast well, ventured an opinion to the officer of his watch that the ship was steering straight for the rocks at Scilly, and advised the altering of her course; this was reported to the Admiral, who, having complete confidence in his officers, ignored the advice. The seaman, however, strongly held to his own opinion, and this so enraged the Admiral that, it is alleged, he ordered the man to be hanged from the yard-arm. Before being hanged he was permitted to read a psalm, and the one he chose was one calling for vengeance upon his persecutors. Shortly after the man was hanged, the *Association* struck in a fog and quickly sank, only one man being saved; the remainder of the fleet were soon in the same predicament, and the loss of life was enormous.

A few brief words about the lesser islands will no doubt prove interesting. Wrecking and smuggling were at one time very prevalent, and the church of St. Agnes is said to have been built from the proceeds of a wreck. There is a well on that island, into which people cast pins, and called upon their patron saint to send them wrecks.

A bell in the turret of St. Martin's Church once did duty on board a ship which ran ashore there.

Of the uninhabited islands, Samson is probably the most interesting. The ruin of former habitations may be seen there. These dwellings, ten in number, were sufficient for the whole of the population, who were originally about fifty in number. Their numbers gradually decreased, and about half a century ago they were so few, and were living in such a semi-barbaric state that the late Governor caused them to remove to the larger islands, where they might learn something of the ways of civilisation. T. H. Liddicoat.

ORCHID NOTES AND GLEANINGS.

NURSERY NOTES.

CYMBIDIUM × EBURNEO-LOWIANUM.

A REMARKABLY fine and distinct variety of this ornamental hybrid Cymbidium is sent by Mr. John M. Bell, gr. to the Rev. Canon Pretymann, Great Carlton Lodge, Louth, Lincolnshire. Mr. Bell writes:—"It comes of a cross between *C. eburneum* ♂, and *C. Lowianum* ♀, effected in 1891, and now flowering for the first time." The same cross flowered in 1889 with Messrs. Jas. Veitch & Sons—the first hybrid Cymbidium to flower in gardens. The

GEO. COOLING AND SONS, BATH.

THE middle of February is not the best time to visit a Rose-garden, but being then in the neighbourhood of Messrs. Cooling's nursery at Batheaston, about two miles from the Great Western Railway Station in the city of Bath, and one mile from the railway station at Bathampton, we were strongly disinclined to leave the district without making a call. We soon discovered that in the light, span-roofed houses the work of increasing the stock of

was *R. himalaica* Cooling's variety, which is described as having larger flowers than the type, and possessing deeper yellow-coloured anthers. Some of these varieties were grafted upon the Briar, and others upon the Manetti stock. Those upon the Briar are "kept up" in potting, so that the stock may have exposure to sun and air. This stock under such conditions will swell as the plant develops, but will fail to do so if the whole of it is buried in the soil. In the case of varieties grafted upon the Manetti stock, Rose cultivators adopt a quite opposite method of procedure when repotting their plants, and the point of union is



FIG. 45.—FIELD OF WHITE ARUM (*RICHARDIA*) IN THE SCILLY ISLANDS. (SEE P. 153.)

(Photograph by Gibson, Penzance)

variety now sent seems different from others in having more colour in the lip, and a distinctly rosy tint in the sepals and petals. Probably a very fine form of *C. Lowianum* was one of the parents, for the rich colour displayed on the lip of the hybrid much resembles the colouring on the lip of *C. Lowianum*. The leaves however are narrower than usual, being only as broad as those of *C. eburneum*. The flowers are $4\frac{1}{2}$ inches across; the sepals and petals of a creamy white, with a decided flush of rose-pink, and the veining, especially that at the back of the flower, is pale green. The lip is yellowish-white, the callus bright yellow, and the front lobe has rosy-purple markings; column yellowish, tipped with purple. It is a very fine variety, beautiful in flower, and ornamental in growth.

new Roses was proceeding apace. In the case of such novelties, time is far too valuable to permit of the propagating being performed exclusively in the out-of-door nursery. Plants had been worked indoors, and were then being shifted into 5-inch pots from smaller ones. These novelties included Queen Alexandra, the new companion to Crimson Rambler, staged by Messrs. Jas. Veitch & Sons at the last Temple Show. The flowers are produced in large erect clusters, and the colour is very similar to that of the red Thorn; also Lady Battersea, Milton, Liberty, Boadicea, Leuchtstern, Sunrise, &c., most of which were illustrated last season in the *Gardeners' Chronicle*. Some of the *R. Wichuriana* hybrids that have been so well shown by Messrs. W. Paul & Son and others, were also being increased in this fashion, as

placed below the surface of the soil, so that the grafted Rose may form roots of its own, and eventually become independent of the stock. These are details familiar to every Rose-grower, and they should be observed by young gardeners who have a desire to increase their stock of particular varieties of Roses by similar means.

In the propagating houses we remarked also the new red Jackmanni Clematis, known as Ville de Lyon, of which a stock is desired as quickly as possible, this type of Clematis being greatly appreciated at the present time. Out of doors Messrs. Cooling & Sons have about thirty acres of land, of which eight acres at least are used for cultivating Roses, and nine acres for fruit trees. The Rose nursery is a considerable distance from what is termed

the home nursery, where the glasshouses, fruit trees, and other nursery stock is contained; but the enthusiasm the firm has for the cultivation of "garden" Roses is reflected in two borders at the home nursery, in which there are 500 varieties, each distinctly labelled with what is believed to be its true name.

The term "garden" Rose is used to describe every section and variety that may not be called "exhibition" Roses, or that are not sufficiently good from the florist's point of view to be shown in competitive classes for Hybrid Perpetuals, Hybrid Teas, or Teas. It includes all the Sweet Briars, the Moss Roses, the single flowers, such as the beautiful R.

FORCING RETARDED PLANTS.

IN compliance with your request, I offer a few additional remarks to those of last week on forcing retarded plants (if the word forcing is necessary). In reality, however, very little forcing is necessary provided the plants or bulbs are placed in a suitable position, and given ample time to come on gradually.

SPIRÆAS

should be potted as soon as received, and not allowed to lie about and become dry, or in any way neglected. Unlike Lilies of the Valley, these make considerable root-growth, and a fair amount of pot-room is required. The soil, moreover, should be of a fairly retentive

I have found that the maximum temperature for Spiræas is 55°, and the time required to flower them depends on the season they are taken out of the refrigerator. Those started in July, August, and September will take from eight to ten weeks, and proportionally longer as the days shorten and light declines. T. Arnold.

(To be continued.)

VEGETABLES.

EARLY CAULIFLOWERS.

WHEN seed is sown in January, February, and March, in preference to early autumn, a



FIG. 46.—LOADING SPECIAL TRAIN WITH FLOWERS FROM THE SCILLY ISLANDS. (SEE P. 153.)

(Photograph by Gibson, Penzance.)

macrantha, China, Polyantha, Noisette, and the varieties of species of Rosa, &c. Such are the 500 varieties that, planted on either side of a walk in the home nursery, scramble up the supports afforded them, and in June produce a prodigality of bloom, such as no exhibition variety can emulate. Every new or rare variety of these old-fashioned Roses, as they are sometimes termed, is obtained for these borders as early as possible, and so the collection is maintained a thoroughly representative one.

The fruit trees are cultivated on a slope in very good soil, consisting of sandy loam, and the trees were clean in the bark and extremely good in appearance. The rest of the nursery stock includes hardy trees and shrubs, conifers, &c.

character, and of good quality, and the potting should be firm.

The plants may be placed in a common garden-frame or cool greenhouse, when they soon start into growth, and may be taken to a house which is kept a little warmer. They must be shaded heavily during the time they are in the cool temperature. When they have made a few inches of growth, less shading will be required, but they must not be exposed to full sunshine till the leaves are well developed, when the shading may be removed by degrees and the plants exposed to full light. But here let me give a word of caution: place each plant in a saucer filled with water, for retarded plants must not be allowed to become dry at any time, and they should receive ample ventilation and space in which to grow.

good succession of Cauliflowers is obtained in the summer months from May onwards, without much risk from buttoning, if ordinary care be taken; the later sowings coming in for out-of-door planting, and the earlier one for growing and forming heads under glass protection. The seed requires a temperature of 50° to 55° for its germination, and the young plants from the first must be kept near the roof-glass or light, and plenty of air afforded, so that legginess be avoided. When two pairs of true leaves form, pot them singly into 60's in a light rich soil, and still keep near the light. For a week or more after the potting is a critical time for the plants, for if the soil should be too moist, or it presses too closely round about the stem, damping off is to be feared. When the plants start into growth,

water must not be lacking at the root, as if this occur good heads are seldom formed. On sunny days a dewing overhead with a fine rose-pot refreshes them. Well established plants should receive a few applications of Clay's Manure in water. Do not let the plants remain long in pots, but plant them in cold frames in rows at 15 inches apart, and 1 foot from plant to plant. The planting should be done in shallow drills, in which superphosphate and a small quantity of nitrate of soda is sprinkled. As the planting proceeds the drills should be filled, and the manure covered. The manure acts immediately on the growth of the plants from the first, and till the heads are fit for consumption. The plants should be freely afforded water. On bright days the frames should be closed at 2.30 to 3 P.M., and the plants sprinkled. Ventilation should be afforded as early in the morning as the state of the weather allows, and protection from frost must be afforded at night. Cauliflowers should always be grown freely, and I am satisfied that it pays the gardener to make use of artificial manure. For early cutting, two excellent varieties are Veitch's Extra Early Foreing, and Sutton's First Crop. If cold frames are limited in number, a few of these varieties may be grown for the earliest crops out-of-doors. To follow these two varieties out-of-doors, Veitch's Midsummer Day, a dwarf compact plant that forms heads quickly, and these are of a good size; and for succeeding these, Magnum Bonum, Universal, and Early Giant, of Messrs. Sutton & Sons; and Messrs. Veitch & Sons' Pearl produce fine heads; and if the seeds are sown at tri-weekly or monthly intervals, Cauliflowers can be obtained till October, when the Large White, and the Autumn Giant become fit for use. I follow the practice of drawing drills and manuring the same at planting time at all seasons, and the land is frequently stirred between the plants, till they are of a size that no longer admits of a man working a hoe amongst them without breaking the leaves or loosening the plants in the soil. *T. H. Slade.*

ZYGO-COLAX × WIGANIANUS SUPERBUS (fig. 47).

THE original form of *Z. C. × Wiganianus* was shown by Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), at the Royal Horticultural Society, January 9, 1900, when it was accorded an Award of Merit, the parentage being given as *Zygopetalum intermedium* × *Colax jugosus*, and the record was probably correct. But in regard to both parents there is a little confusion in gardens, the fine old *Zygopetalum Mackayi* often being named *Z. intermedium*, and *vice versa*. With respect to the *Colax*, botanists have placed that part of the genus which includes *C. jugosus* under *Lycaste*, and hence the name would be *Lycaste jugosa*.

Zygo-Colax × Wiganianus superbis, which was evidently derived from the finest forms of each species used in the crossing, was shown by Messrs. Sander & Sons, St. Albans, at the Royal Horticultural Society, February 25 last, and was unanimously accorded a First-class Certificate.

It is a very attractive flower, larger in all its parts than the original, and beautifully marked. The substance of the flower is fleshy, and the surface glossy. Sepals and petals light green, closely marked with chocolate-purple. Lip violet-blue, with the white ground colour showing through towards the margin. The plant shown was quite a small one, and the flowers were very large, compared with the size of the plant.

ROYAL VICTORIA PARK AND BOTANIC GARDEN, BATH.

[SEE SUPPLEMENTARY ILLUSTRATION.]

THE Victoria Park, situate rather less than half a mile from the centre of the fashionable city of Bath, was opened by Queen Victoria in 1830, seven years before her accession. It was created at the expense of some of the wealthier inhabitants of the city, who provided a sum of £4000 for this purpose. At the present time, the park and botanic garden, which is contained in the park, constitute an area of 49 acres.

The management of this delightful pleasure ground and botanic garden is of a kind that is nowadays very rare. Though belonging to the citizens, the park has never been officially taken over by the authorities; it is therefore managed by an elected committee, and is dependent upon voluntary contributions, and upon small sums that are charged for the privileges of cycling on the excellent roads,

of spring before bursting into leaf and flower. That splendid tree, *Prunus Davidiana*, had its flower-buds well developed; and upon the rockery, *Primula denticulata* in similar condition seemed impatient for the frost to lift. But the Snowdrops, the Winter Aconite, Eriacas, and several of those choice hardy Irises, that are as early to flower even as the Snowdrops, were the only plants actually in open flower.

The photograph reproduced in the Supplement to our present issue was taken during last summer, and represents a few flower-beds in a portion of the park near to the Royal Crescent. The trees in the background include a fine Beech-tree, a smaller copper-leaved Beech, and a Horse-Chestnut tree. These few flower-beds are nearly all of a similar kind there are in the park, the bedding-out system being but little practised there.

The Royal Crescent alluded to is a most handsome five-storied building of stone, that overlooks the park on the south-east side. It is considered to be one of the most noteworthy



FIG. 47. — ZYGO-COLAX × WIGANIANUS SUPERBUS.

Flower (real size) green, with purple spots; lip blue.

attending the band concerts, and so forth. That the exceedingly interesting collection of trees and shrubs and of alpine and other hardy plants contained therein is maintained with so much care and judgment, is an excellent testimony to the liberality and intelligence of those upon whom the task devolves, rather than a justification of the present system. Most cities and towns have awakened in late years to a sense of their responsibility in the matter of acquiring and maintaining such means of out-of-doors amusement, recreation, and instruction as are provided by public parks and botanic gardens, and by officially making themselves responsible for the future maintenance of such as they possess, have secured them against possible neglect which may result, if from any reason it is found impossible to raise the necessary sum that is each year necessary. Probably the authorities would make themselves responsible for the park if such a state of things actually occurred; but the pity of it is in many such cases, the plants are allowed to suffer irreparable injury in the meantime. We hope such a misfortune will never happen to Bath.

On February 17, when we had the pleasure of visiting the park, there was little sign of the vegetative life that awaited the influence

architectural features of the city, and is composed of private residences.

Mention has already been made of the collection of trees in Victoria Park, selected we believe by Loudon, and planted by the late W. H. Baxter, who at one time had charge of the Bath Garden. The following are some of the most conspicuous ones. In an avenue of Horse-Chestnuts upon one side, and Elms on the other, particular interest centres in the Elms, which are different from each other, and are neatly but legibly named. These trees, with others in different parts of the park, make a very good collection of Elms. Varieties of *Crataegus* are numerous, and some old standard trees (all of them grafted), distinctly named, are very interesting, as they exhibit differences in habit of growth. There is a very old specimen of the Glastonbury variety (*C. oxyacantha praeox*).

Among Oaks we noticed fine trees of *Quercus asplenifolia*, *Q. Ilex* (the evergreen Oak), *Q. Cerris variegata*, with a curious habit of growth, the branches being very flat, and the top of the tree almost like a table, but it is a tree having a very beautiful effect when in leaf; *Q. rubicunda*, *Q. robur*, planted on our present King's wedding day, &c. There is a

fine tree of *Pavia flava*, near to the Queen's Square entrance to the park, and other species of *Pavia* and *Aesculus* were noted. One of the species of *Aesculus* (*A. carnea* or *rubicunda*) was unusually interesting, as it was more or less covered with burrs, formed probably in consequence of the attack of a mite. These burrs varied in size from that of a hen's egg to 2 feet across, and they were studded over with buds upon small spur-like growths 2 or 3 inches long. At the flowering stage these burrs become almost covered with a mass of curiously developed flower-spikes. There were originally six specimens in the park, but only two now remain, four having been cut down from

Cedrus Libani; the double-flowered Chinese Cherry, with flat branches, covered at top with short spur-like growths; a number of very large *Ailanthus glandulosa*, which form a marked feature of the park; *Ulmus suberosa* (the Cork Bark tree); a fine specimen of the handsome-leaved *Acer macrophyllum*; *Juglans nigra*; *Trachycarpus excelsa*, 20 feet or more high, protected with mats, &c. Some Weeping Willows of considerable dimensions, and other weeping species, adorn the margins of a pond which was beautified years ago by Milner, who formed a small island and made the banks into a pleasing outline, and planted them. A group of Hollies is very effective on one of the

other presenting itself for comparison, viz., *C. × Winnianum* (*villosum × Drurii*).

The flowers of *C. × A. Dimmock* have a shining wax-like appearance. The upper sepal is green at the base, spotted with dark purple, a broad band of nearly black hue running up the middle; the area above the green base is of a rose tint, the upper part and margin white. Petals and lip yellow, spotted and tinged with purple-brown. The plant seems to be a very strong grower, and when thoroughly established it may develop still greater beauty.

THE DESTRUCTION OF NATIVE PLANTS.

THE wholesale destruction of native plants by collectors for trade purposes is a matter that is becoming serious in many parts of the country; the scouring of hedge-banks and lanes for Primroses to meet the demand in large towns for the commemoration of an eminent statesman, is a case in point. To prevent such spoliation, it would be well if the local authorities throughout the kingdom were to follow the example of the United Devon Association in their efforts to preserve the natural beauty of the county by the prevention of the illegal removal of Ferns and wild flowers. These words are extracted from a report in a recent issue of the *Devon and Exeter Gazette*, of the prosecution of two men for wilful damage at Kenn, near Haldon, by taking up and carrying away a large number of Ferns and Fern-roots. The circumstances were as follows:—On the 6th inst. both the men were seen in the plantation in the act of digging up the roots, and being ordered off, left, promising not to return; later on, however, they returned and resumed their work, and when they were again surprised, the ground was found for yards riddled with numberless holes from whence the plants had been dug. Further on, no fewer than ten sacks filled with Ferns, and covered lightly over with leaves, were found, and close by a large heap of Ferns ready for removal. A horse and trap appeared later on the scene to remove the spoils. When the men were taken into custody, and upon an examination of the fruits of their labour being made, it was found that the number of roots taken amounted to nearly 2,000. The value of the Ferns for the purposes of the prosecution was estimated at from £8 to £10. The solicitor who appeared for the prosecution asked that a heavy penalty might be inflicted, as such men as the defendants were in the employ of London dealers who paid all the fines incurred by the Fern-gatherers when the latter were convicted. It was also said with regard to the principal offender that there was no doubt of his having sent to London at various times large quantities of Ferns. On January 20 he sent bags of Ivy and ten bags of Ferns; on January 31 seven bags of Ferns; and in the first week of February two bags more, all of which were consigned to a dealer in Covent Garden Market. The principal defendant was sentenced to two months' imprisonment with hard labour, and the other man, who seemed to a certain extent to be the other's agent, to six weeks with hard labour; and in sentencing them, the Chairman said that the Bench were determined to put a stop to such depredations, which were ruining the beauty of the county of Devon.

The Devonshire magistrates will have the full sympathy and support of all who love the country for the sake of its natural beauties. *John R. Jackson, Claremont, Lympstone, Devon.*

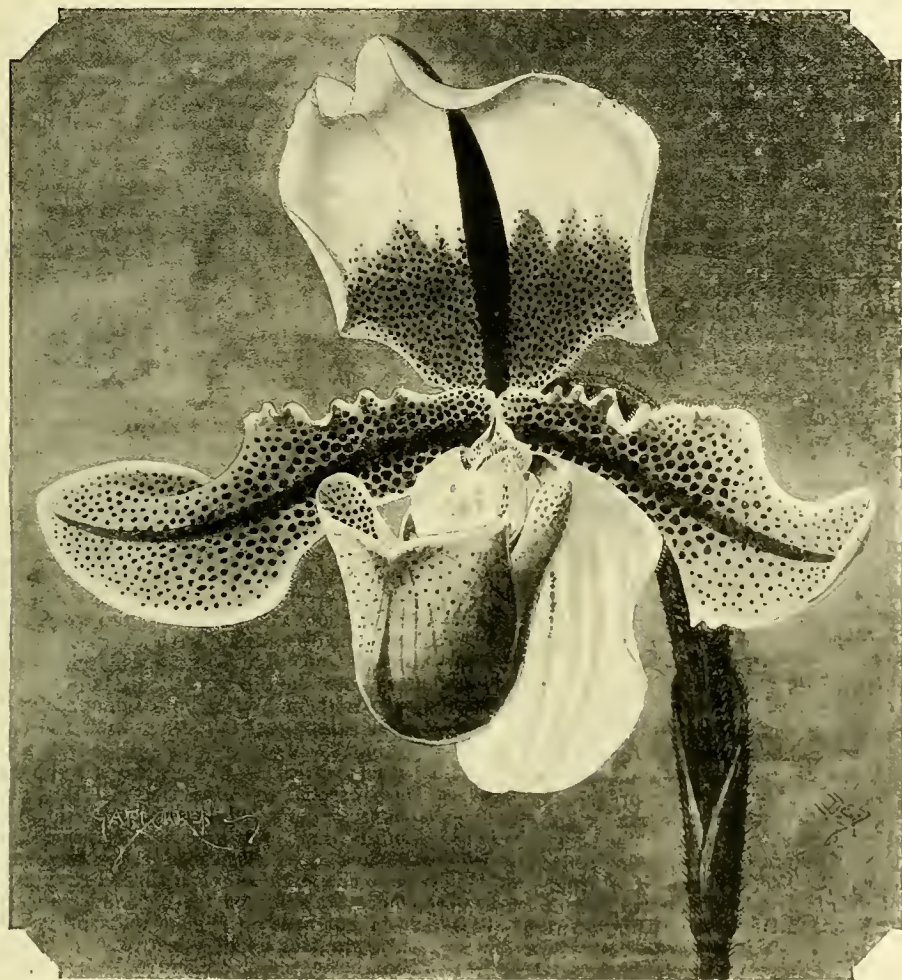


FIG. 48.—*CYPRIPEDIUM × A. DIMMOCK*.

the same reason. All of the trees were grafted upon the common Chestnut at different heights. Only the scions have been affected, never the stock, and although there are growing in the park many fine trees of Chestnut and *Pavia*, Mr. John Milburn, the present superintendent, declares that none other have been so affected. It would be interesting to know if this species has suffered similarly in other parts of the country.

Other trees that are noteworthy include *Gleditsia sinensis*, *Arbutus hybrida*, with five great spreading limbs proceeding from the bole of the tree, which is much cracked by the action of frost; *A. Andrachne*, exceedingly pretty with its reddish-brown branches, but bright green under the peeling bark; *A. Unedo*, which unlike *A. Andrachne*, fruits freely in most seasons; *Cupressus macrocarpa*;

banks, some little distance from the water, and in a delightful corner near to the water-fall are grouped a selection of choice tinted shrubs.

(To be continued.)

CYPRIPEDIUM × A. DIMMOCK (*GODSEFFIANUM × DRURII*).

SOME of the sections of hybrid *Cypripediums* have become so crowded as to render the identification of those nearest alike very difficult. In the case of the one represented by our illustration (fig. 48), and for which Messrs. Sander & Sons received an Award of Merit at the Royal Horticultural Society on February 25 last, no complication of the kind presents itself, for it is quite distinct, and not likely to be confounded with the only

The Week's Work.

THE FLOWER GARDEN.

By R. DAVIDSON, Gardener to EARL CADOGAN, Culford Hall, Bury St. Edmunds.

Hints on Work in General.—In the mixed borders, groups of *Iris reticulata* and *I.* major are now developing their deliciously fragrant flowers, and a little protection should be afforded them against frost and cold winds by placing hand-lights over them; or in lack of these, some Fir-boughs stuck firmly in the soil, and reclining over the flowers, will do tolerably well, serving also as a shade from sunshine, and thus save the flowers for a much longer period of time. Where *Anemone fulgens* is grown for effect, the plants must be carefully guarded against the ravages of pheasants, it being well known that they injure the young foliage coming through the soil, and also the flower-buds as they open by their scratching. Wire-netting about 3 feet high, neatly fastened around the beds or groups, is the most effective means of preserving the plants. Crocuses also, especially the yellow-flowered variety, are much disturbed by pheasants if no protection be given. If these bulbs are planted as narrow bands at the margins of beds and borders, Pea-guards may be placed over them as soon as they appear through the soil, which will preserve them from injury by these birds and sparrows.

Propagation.—If the propagating-frame is becoming empty, it may be reoccupied with the main batch of *Lobelia*-cuttings, taken from last year's selected stock plants; and if these cuttings are made $1\frac{1}{2}$ inch in length, and inserted to one-half their depth, quite close together, in a thin layer of sharp sand mixed with leaf-soil, on a bed with a bottom-heat of 60° to 65° , and sufficient water afforded with a fine rose water-pot, and slightly shaded from strong sunshine, in a few days roots will form. By gradually inuring the young plants to light and air, in a fortnight or a little more they will have made sufficient roots to warrant their being placed in shallow boxes at a distance of $2\frac{1}{2}$ inches apart. The compost in the boxes should not be much enriched, and a temperate-house will be the best place for them for about a fortnight; then remove to cold frames.

Violets.—Plants grown to produce flowers in succession to those in garden frames may have all protecting material removed, and be freed from decayed foliage and rubbish, stimulating growth by means of a light dressing of charred garden rubbish or wood-ashes, worked carefully into the soil. If the plants grow at the foot of a west or south wall, in a light, dry soil, an application of weak soot-water will act beneficially on them.

THE ORCHID HOUSES.

By W. P. BOUND, Gardener to J. COLMAN, Esq., Gatton Park, Reigate.

Propagation of *Dendrobiums*.—The plants should be placed on bottom-heat, and failing that, a position should be found for them that is near to the hot-water pipes in the stove Orchid-house, on a frame of some kind, or a hand-glass, the latter being usually sufficiently large for the purpose. The ordinary propagating-case is too moist in which to start the plants, although after the growths have been potted it answers quite well. In the case of the hot-water pipes being used, plenty of crocks for drainage should be placed for them; and when a stage is used, crocks are equally needed, as nothing that will retain moisture should be beneath the cuttings. Over the crocks place a mixture of two-thirds chopped sphagnum and one-third coarse sand, to the depth of 1 inch. If the pseudo-bulbs intended to be propagated were removed and laid on a dry stage, as previously advised, some of the sap in them would be dissipated, and they would not be liable to decay when cut up, and would start into growth quickly. The pseudo-bulbs should be cut into lengths, each with a dormant bud, but all the joints which have borne flowers may be thrown

away. The propagating-bed should be divided into sections with sticks, each section being as large as will accommodate one species or variety. Each should be named correctly—a matter of importance in a collection of Orchids. The cutting should be lightly pressed into the materials of the bed, only just deep enough to hold them steadily, with the dormant bud facing the light. Keep the frame, &c., close in the daytime, but afford air at night; on bright days a slight damping of the cuttings with the syringe will help them, but the compost must be kept on the dry side. If not placed over bottom heat no water should be afforded. As soon as the cuttings have grown 1 inch in length, place them in very small pots in a mixture of two-thirds chopped sphagnum-moss, and one-third chopped peat fibre, and return them to the frame, &c. till the first small pseudo-bulb is made up, afterwards gradually harden them off. The cuttings which are the earliest started will often make a second pseudo-bulb the first year. A collection of *Dendrobiums* may thus be kept young and vigorous if a few are propagated annually.

General Remarks.—The days are gradually getting longer, and the sunlight stronger, therefore the houses should be damped more frequently; and some species of plants will require more water at the roots. We must take care that the sun does not burn or unduly shrivel any of the plants. It is desirable to admit as much sun as can be done with safety, especially in the early morning, and late in the afternoon. Although there have been some days with clear sunshine, the next six weeks will be a very critical period, and every attention will be necessary to keep the temperatures right. This is extremely difficult when there is strong sunshine all the afternoon, and it is followed by a sharp frost and cold winds, as before we can get the proper night temperature the warmth has fallen lower than the correct temperature for the early morning. The fires should be started early enough in the afternoon to prevent this occurring. The temperatures should gradually fall from 3 P.M. to 6 A.M. to get as near as possible to the ideal temperature; nothing is more harmful to plants than to have the temperature higher in the morning than at night.

***Odontoglossum*-house.**—During bright days the *Odontoglossums* will be greatly benefited by a good overhead syringing about mid-day, which will be sufficient for the present; but frequently damp the stage, &c.; and admit air freely whenever practicable. The side ventilators may be opened whenever the outside temperature is above 45° . The bottom ventilators should never be shut quite closely; ours have not been shut this winter. A small quantity of air may be admitted at the top of the house until the last thing at night.

THE KITCHEN GARDEN.

By T. TURTON, Gr. to J. K. D. WINGFIELD DIGBY, Esq., Sherborne Castle, Dorset.

French Beans.—Where convenience exists for so doing, the best results are obtained in hot-water pits filled with tree-leaves and short stable dung in equal parts, over which sound loam, such as is suitable for Melon growing, should be placed to the depth of 1 foot without further preparation. If the pits are at liberty, let the Beans be sown in boxes at 3 inches apart, and place the boxes in a forcing-house, to be planted in the pits when the heat has declined to about 80° . Beans raised in this manner can also be planted in any bed or border in heated houses which may commend itself as suitable. Continue to practice the directions given in previous Calendars for fruiting and successional crops in pots.

Cauliflowers.—Pot into 3-inch pots the strongest plants of Pearl Cauliflower, seeds of which I advised the sowing in heat in January. Harden off the smaller plants, and prick them out at 4 inches apart in a spent hot-bed frame. Prick out also at the same distance apart seedlings of Early Forcing sown at the same

time. When planting out those last named into the open ground in April, every alternate plant in alternate rows may be left to form heads in the frame. They afford nice heads during the month of May, and being more delicate in flavour than Broccoli, are much appreciated.

Autumn-sown Onions.—Take the earliest opportunity when the ground is in a good condition for doing so to transplant these into ground that has been well prepared by trenching and heavily manuring. My practice is to plant a few rows on the margins of the ground prepared for spring-sown Onions. Plant in rows 15 inches apart and 9 inches in the rows. Preserve the roots as much as possible, and plant them just deep enough to keep the Onions in an upright position.

Potatoes.—Look over stores of these, and if convenient to do so remove them to a fresh place, be it in bins or in heaps on the floor of a shed or cellar where they will be secure from frost. Rub off the growing shoots, and use special care in handling the tubers, as after this date rough handling easily blackens them. Upon the first fine day look carefully over those in clamps; taking away diseased tubers, rubbing off shoots from the others, and removing them to the Potato-cellar or frost-proof shed. If the seed-tubers of main crop sorts have been kept over the winter in clamps, after rubbing off all the shoots, spread the tubers out thinly on shelves or floors where they can be made secure from frost, yet kept cool.

Potatoes in Heated Pits.—On warm sunny days examine the earliest plantings, and should the soil be in a dry state, afford sufficient tepid water to moisten well the whole bed of soil. In succession pits, as soon as the tops are well through the soil, if there is sufficient depth of soil, draw it up to the Potato-stems; or top-dress with soil such as that in which French Beans have been grown, which has been kept in a warm shed; otherwise it must be warmed previous to using. Plant succession crops in frames on beds of tree-leaves, having first prepared the beds as advised in a former Calendar. After placing from 6 to 9 inches of rich loamy-soil in the frame, it being about the same distance from the glass, take out deep drills with a trowel at 15 inches apart, and plant the sets 9 inches apart. The sets should have been laid out in boxes to sprout, and all shoots except two or three of the strongest taken out with the point of a knife.

General work.—Clear away all the decaying leaves from Brussels Sprouts, Kales, and other winter greens and Broccoli. Do not, however, unduly expose the stems of Broccoli in view of the possibility of further severe frosts. Keep the manure-heaps turned regularly; and where tanks exist for catching the drainings from hot-beds or from stables or cow-houses, throw sufficient of this over the heaps to aid the rotting of the manure before the drying winds of March are upon us.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bilton, East Budleigh, Devonshire.

Labelling.—Before it is too late to distinguish the names on the nurseryman's tickets, let all newly bought-in trees and fruit bushes be furnished with lasting labels of zinc, lead, or hard wood, doing this very necessary work without loss of time. The lead label of our forefathers has my preference, having the letters or numerals punched-in with dies and painted white; the pieces of sheet lead, one-eighth of an inch in thickness, being cut of various sizes, according to length of the name of the variety to be stamped on them. Two holes should be made to take the wire or nails, the latter for attaching to walls, the former for fastening to stakes or trellis. These labels are rather too heavy for hanging on standard or bush trees in the open if the full name is put on, and in their case pieces $1\frac{1}{2}$ inch square should be employed for stamping with numbers, which should correspond with the name written in a book. The Acme label is largely used, and has proved all the inventors claimed

for it, neat, simple, and durable. In fastening the wire on to the trees, plenty of space should be left for the expansion of the branch or stem, otherwise canker may be set up, a malady that should be avoided at all costs.

The Wineberry (Rubus phenicolasius).—A fruit of recent introduction, and deserving of extended cultivation, ripening as it does during August and September, has proved a useful culinary and dessert fruit, and one of which the birds are not over fond. The plant bears similarly to the Raspberry, and requires the same general kind treatment. It grows rampant at Bicton, and would make an excellent plant for covering arches, the crimson-coloured shoots adding to its beauty, even when not in fruit. The quickest way to multiply the stock of the plant is by pegging the points of the shoots down to the soil in early autumn, when they quickly form roots. Being later in starting into growth than the Raspberry, it may still be transplanted in dry weather. Late-planted canes should be well mulched forthwith.

The Blackberry.—Of the many varieties found in nurserymen's catalogues, the Parsley-leaved is the one most generally grown in gardens, it being a hardier plant than the American kinds, though the Wilson Junior is a very fine fruit; but it requires plenty of space and a very warm, sheltered position in this country to do it justice, in which respect it resembles the Wineberry. These Rubuses should be grown on strained wire fences, or over wire or rustic arches of wood, and the shoots pruned back to a plump bud early in the present month, the wood that has fruited in summer having been removed in the early autumn, as in the case of Raspberries.

FRUITS UNDER GLASS.

By JAMES WHYTECK, Gardener to the DUKE OF BUCKLEIGH, Dalkeith.

Tomatos.—These, if they have been growing all the winter in a Cucumber or other warm house, will have grown tall, and in order to prolong their season of fruitfulness till the plants raised from seed at the new year are fit to take their places, the stems may be laid horizontally, intercrossing each other, bending each top into the soil in the pots or boxes. Keep the young Tomato-plants near the glass in a warm house or pit; and sow seed for the general summer supply, sowing thinly in well-drained pans or pots, and pricking out quickly into boxes when the plants are fit to handle, and keeping them near the glass.

The Orchard-house.—The roots of young Plum-trees which are growing very strong should be examined, and some of the stronger roots shortened, and the rest raised towards the surface. See that the soil of the borders and that in the pots is in a thoroughly moist state; and the pruning having been performed before the cleaning was begun, all will be in readiness for a start.

Early Peach-house.—The foliage is now fully developed, and may be heavily syringed twice daily, a little weak insecticide being frequently used in the water. Until the stones are formed in the fruit, keep a rather lower temperature, say 55° at night, and admit air at the top of the house in quantity according to the weather in the daytime. See that the soil of the borders is moderately moist, and when the second swelling begins, that is, after stoning, the temperature on mild nights should be 65°, and 60° on cold nights; close the house early in the afternoon with a temperature of 80° or 85° from sunheat. During the second swelling the trees should receive manure-water in a weak state. The final thinning of the fruit should be carried out when the second swelling begins, leaving one fruit to a square of 9 inches, or in the case of the weaker trees, 12 inches. The trees of Peaches and Nectarines that were started in January having set their fruits, these may be thinned for the first time, and a slight disbudding carried out; and in the case of fruits at the base of the buds, let three leaves be left to aid in developing them. The

temperature at night may range from 55° to 60°, according to the state of the weather; and on bright days let it reach 80° or 85° at the closing time. Syringe the trees twice daily except in dull weather, when once a day will be enough. Let the air be buoyant yet not arid. The border should be afforded water plentifully, and if the trees are vigorous they will require no manure, but old ones and those in a feeble state should have artificial manure, or tepid, diluted manure-water. Peach-trees to carry ripe fruit in July and August should now be in flower, and as much heat kept in the hot-water pipes as will afford a buoyant warmth in the house. A small quantity of ventilation night and day may be afforded at the top, and a night temperature of about 50°, rising to 70° or 75°, by day with sunshine. Apply water to the border when starting the house, and no more till the fruit is set.

Strawberries.—The fruits of the earliest forced plants are now ripening, and will be the better for being placed on an airy shelf. The succession plants will have thrown up strong foliage and flower-spikes, and should have received a top-dressing of some kind of artificial manure when put into the forcing-house, no more manure being applied till the fruits are swelling. When in flower maintain a warmth at night of 50° to 55°, and when the fruit is set let the temperature by night be not higher than 65°, the day temperature being 10° higher. Syringe the foliage, and apply no manure after the first fruits change colour. Thin the fruit sufficiently, and grow all so as to be fit for dessert. When the fruit is picked, put the plants in cold frames to harden-off for planting-out. All vacant shelves and frame space should be kept filled with succession-plants, washing the pots and top-dressing the plants before bringing them in.

PLANTS UNDER GLASS.

By J. C. TALLACK, Gardener to E. MILLER MUNDY, Esq., Shipley Hall, Derby.

Hard-wooded Plants.—The general collection will, during the present month, require much attention, especially with regard to ventilation, as on one hand cold draughts must be avoided, which is the cause of mildew on Heaths; and on the other, so as not to stint the plants of air. Water at the roots is now more frequently needed, and it should be, if possible, rain or river water. Leschenaultias and Boronias are plants with delicate roots, which quickly succumb to excess or lack of water.

Epacris.—When the flowers fade generally, the shoots should be pruned back almost to the base, and very weak ones entirely removed. For a few weeks afterwards much water should not be afforded, neither should much air be admitted; and it is better to remove the plants from the greenhouse to another house where less ventilation is afforded. When the forwardest of the new shoots are about 1 inch long, the plants should be turned out and repotted in a mixture of hard turfy peat and sand, potting them firmly, and taking care that the rootstock is not buried in the soil more than from $\frac{1}{4}$ to $\frac{1}{2}$ inch; and the roots are not long exposed to the air while the potting is being carried out.

Ericas.—Winter-flowering varieties which were cut back and started into growth in an intermediate temperature as advised a few weeks ago, will now be in a fit condition for being shifted, and this should not be delayed, it not being advisable to keep the plants in this house any longer than is absolutely necessary to induce the roots to seize upon the new soil. The same kind of soil as that employed for Epacris is suitable for Heaths, also potting and crocking, both of which must be carefully performed. Late or summer-flowering Heaths should be kept cool and well ventilated, so that they may come into flower at their proper season. Watch the tips of the new shoots, and if these are observed to be of a much paler tint than the matured leaves, it is an indication that the house is not well ventilated.

Cytisus racemosus.—Plants in bud or in flower may be afforded occasionally clear soot-water, which will impart a deep green tint to the leaves, and check the spread of red-spider. After the plants have ceased to flower, let them rest for a few weeks in a cold frame.

Stove plants.—In the stove there will be many plants now in need of repotting, and it will be advisable, in the case of those of a shrubby nature, to reduce the balls slightly, and repot them in the mixture of soil most suitable to the various subjects, making sure that the materials used are of the best, and that they are warmed, and the drainage is well arranged and effective without being too bulky, a few well-placed crocks being better than a large quantity put in carelessly. Allamandas, Bougainvilleas, Clerodendrons, and the like, which may have been recently hard pruned, should be left untouched until they start into growth.

Gardenias, if furnished with flower-buds, may have a weak mixture of water and some artificial manure applied, and occasionally clear soot-water. The young shoots that show around the flower-buds should be pinched out before they become large, or the latter will be injured. A few plants should, however, be allowed to grow away without any pinching of the shoots or points, for affording cuttings.

THE APIARY.

By EXPERT.

In my last contribution on the subject of feeding bees, I mentioned a method of making Cake Candy, and I now describe that of Flour Candy. This is made exactly in the manner previously described, but directly the pan is removed from the fire for cooling the candy, carefully add $1\frac{1}{2}$ lb. of pea-flour to the 10 lbs. of sugar, and stir the whole briskly till the mixture begins to stiffen, then proceed as before. Its effect on the bees is most beneficial. When used with frame-hives, the attached paper should not be removed, as this, placed uppermost, will prevent the flour-cake from sticking to the quilt.

Honey on Hand.—All honey on hand should be looked over, and where the sections have become candied, they should be bruised and given back to the bees a little later on to clear. Sections of honey should be sold now, unless they are to be kept for show purposes; and the same remark applies to run honey. Where this has candied, care should be taken that it is not made too hot to enable it to run, as this spoils the flavour very considerably. All crates and frames should likewise be cleansed, and a few got ready with full sheets of foundation wired-in for insertion in the brood chamber. Remove the old ones, unless they contain a little honey, which should be bruised and placed right in the front or the back for the bees to clear. It is a great mistake to keep comb in the hives for too long a period, and it is always less expensive in the long run to replace it with full sheets to strong stocks, much valuable time being lost in comb-building when the bees should be breeding.

Honey Imports.—The value of honey imported into the United Kingdom during the month of December, 1901, was £1,039.

SPRING-TIME* IN LONDON.—The current number of the *Girls' Realm* (Norfolk House, Norfolk Street, W.C.), includes an illustrated article on "Spring-time at the Corner of the Street." This deals with a subject somewhat rare in popular literature, that is, the numbers and varieties of flower-sellers in the London streets, where spring is certainly, in one sense, more forward than in many a country place in England. The same publication describes "A Year's Practical Gardening," or how two girls did the work of a head gardener. The adventures of the inexperienced couple will no doubt interest young readers of the magazine and others who are fond of flowers and of gardening.

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, MAR. 10. { Annual Meeting of the United Hort. Benefit and Provident Association, at 8 P.M.
TUESDAY, MAR. 11. { Royal Horticultural Society Committee Meetings.

SALES FOR THE WEEK.

MONDAY, MARCH 10.—Plants, Bulbs, &c., by Protheroe & Morris at 12.0.—Roses, Fruit Trees, and miscellaneous plants, by Johnson, Dymond and Son, at 12.0; Japanese Maples at 3.0.
TUESDAY, MARCH 11.—Clearance Sale of Conifers and Evergreens at Joyning's Nurseries, Waltham Cross, by Protheroe & Morris, at 12 o'clock.
WEDNESDAY, MAR. 12.—Azaleas, Liliums, Bulbs, &c., by Protheroe & Morris at 12 o'clock.—Specimen Palms and other Plants, at Stevens' Rooms, at 12.30.
FRIDAY, MARCH 14.—Hardy Plants, Perennials, &c., by Protheroe & Morris at 12.0.—Orchids in variety, by Protheroe & Morris at 12.30.—Lilies and Miscellaneous Plants, by Rendell & Searle, 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°1'.

ACTUAL TEMPERATURES:—

LONDON.—March 5 (6 P.M.): Max. 47°; Min. 35°.

March 6.—Wet fog.

PROVINCES.—March 5 (6 P.M.): Max. 48°, Scilly; Min. 41°, E. England.

Artificial Winter. OUR forefathers would truly have stood aghast at many things which we, their successors, take as a matter of course. Much of what we do they would have looked on as a presumptuous interference with the laws of Nature. We know, to speak of our own experience, that they, or some of them, objected to the raising of artificial hybrids. If they could have carried their objections into practice, they might have reduced us to the consumption of "berries harsh and crude," and to the utilisation, with little improvement, of roots such as formed the dietary of the noble savage when wild in woods he ran. Nowadays, in order to keep the milk sweet, we heat the fluid to kill one bacillus—a fact of which the antivivisectionists should surely take note, and we add another to enhance the flavour of the butter and the uniformity of its composition. We illuminate the opacity of our organisation by the employment of rays of light which penetrate what was before impermeable. The phrase to see through a brick wall no longer conveys the impression of something beyond the limits of possibility. As for poor Puck, and his boast of putting a girdle round about the earth in forty minutes, Signor MARCONI has put him hopelessly behind the age. Actual fact has transcended imagination. Imagination foreshadowed the possibility; science has more than secured its realisation. All these things have been brought about by intelligent observation, research, and experiment. The same holds good in gardening. If we are to progress we must be constant in observation and experiment. If we restrict ourselves, as many of us are obliged to do, to the daily routine of practice, we may become as good

gardeners as our fathers were before us, but we shall not push the machine forwards, or leave our art any better than we found it. Fortunately, competition and commercial interest combine to overcome the stagnation of practitioners, and lift us out of the rut of routine. We have been led to these reflections by the perusal of an article on the retardation of plant-life in the columns of *Cold Storage* (5, Great Queen Street), which is so suggestive that, while leaving to our contemporary the responsibility for his statements, we think it of sufficient interest to transfer the greater part of the article to our own columns:—

"In the vegetable kingdom, with a few exceptions, the work is done in the summer and rest is taken in winter. In hot-houses it is always summer, and in cold stores it is always winter. Given the facilities for these conditions, the gardener of to-day is practically master of the situation, and can make plants live or rest, flower or fruit, just as he pleases or just as they are wanted for the market.

The field of actual experience in this branch of cold storage is not as yet a wide one, but, as far as is known, the best design for a horticultural cold store consists of an insulated room, kept in perfect darkness, and at a temperature of somewhere about 22° Fahr. The room should be surrounded by wooden shelves, covered with a layer about 2 inches thick of fine dry washed sand. On this sand the more delicate bulbs and roots should be laid, as, thus placed, they would be more available for examination from time to time. In stores attached to nursery gardens, where a trade is done in the roots, and where they are generally imported in large quantities from abroad, the roots need not be moved from the packing-cases in which they arrive, but can be piled up on the floor in these until wanted. There is no occasion to use cold-air refrigerating machines, which are very expensive in fuel; the much more economical carbonic acid or ammonia machines, working with brine circulation or direct expansion, are much the best. With these machines the temperature of the cold store can be regulated to a nicety by valves in the ordinary way. The rooms can be piped on the ceiling or round the walls, but in order to save the expense of running the refrigerating machine too frequently, brine walls or direct expansion pipes and brine accumulators are to be preferred. With these, a run of a few hours a day will generally suffice, for it must be remembered that, unlike food stores, root stores are not required to be entered continuously, and that in consequence, provided the insulation is good, there is very little tendency for the temperature to alter much.

These small refrigerating stores are eminently suitable for use in connection with the gardens of country houses, and can also be used for preserving all sorts of fruit (Apples have been kept in cold storage in perfect condition for over two years), vegetables, food, butter, game, &c. They might also be combined with a small ice-making plant, sufficiently large to keep the mansion supplied with ice during the summer months. As ice is always expensive, and usually exceedingly difficult to obtain in the country, this would be a great boon. From £400 to £500 would easily cover the cost of a small cold storage and ice-making plant suitable for such a purpose, and the gain from every point of view is inestimable. Most country houses of any pretensions already have their own electric light installation, in which case the same driver could readily run all the machinery.

In any case, an intelligent gardener could easily manage it.

There appears to be no reason why practically any root plant should not be capable of having its growth retarded by cold storage. Its use is at present confined to retarding varieties of bulbs, but any perennial that naturally dies down or loses its leaves in the winter should be susceptible to the same treatment, and made to bloom at any season of the year. For evergreens, light is required, and in that case greenhouses should be made with double glass lights, but with as few of them as possible. Naturally, however, owing to the less perfect insulation, these would require rather more refrigerating power than the dark store.

When the roots or plants are wanted to flower, they are removed from the cold store. With evergreens the change of temperature should not be too sudden, and they should be kept for a few days in an intermediate room before being removed to the open air or to the hot-house, as the case may be. Roots can be taken straight out of the store, and, after they have thawed in the ordinary atmosphere, can be planted out in beds or pots in the usual way.

The influence of warmth and dampness rapidly stimulates the dormant vitality. Lily of the Valley crowns in the ordinary way take six weeks to flower. Retarded roots are much more rapid; in a few days the shoots are a few inches high, in a week the plants are vigorous, and in less than a month they are in full bloom. Some plants, of course, are naturally more vigorous than others, but the prolonged rest appears generally to have the effect of stimulating the growth when once it is started.

There would seem to be no occasion to limit retardation by cold storage to plants and flowers; by its aid Grapes, Strawberries, Raspberries, Figs, and all manner of glass-house fruit, might have their fruiting season retarded at the absolute will of the gardener.

Steam power is not necessary; any form of motive power, such as an oil-engine, gas-engine, or water-wheel, is suitable, and, so long as there is a suitable supply of water for condensing purposes, the store can quite well be built in any convenient position, or in the place where power already exists. About five horse-power is amply sufficient to work a small cold store, and a small oil-engine will, in country districts, be generally found most suitable and economical for the purpose."

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Floral and Fruit Committees will be held on Tuesday, March 11, in the Drill Hall of the London Scottish Volunteers, Buckingham Gate, Westminster, from 1 to 4 P.M. A lecture on "The New Soil Science" will be given at 3 o'clock by Mr. R. HEDGER WALLACE.

—At a general meeting of the Royal Horticultural Society held on Tuesday, Feb. 25, seventy-two new Fellows were elected, amongst them being the Marchioness of Bath, Lady Ebury, Lady Lewis, Lady Peel, Lady Ridley, Hon. Mrs. Parker, Hon. John Wallop, Lieut.-Col. Jas. Campbell, Major W. D. Garnett-Botfield, Surg.-Gen. A. Eteson, Capt. B. J. St. George, and A. H. Lyell, M.A., F.S.A., making a total of 255 elected since the beginning of the present year.

—The prize schedule for the Crystal Palace Fruit Show will be issued by the Royal Horticultural Society on March 31, price (post free) one penny. Donations towards the prize fund will be gratefully received by the Secretary of the Royal Horticultural Society, 117, Victoria Street, London, S.W.

HORTICULTURAL CLUB.—The monthly dinner will take place on Tuesday, March 11, at 6 P.M., when the subject for discussion will be "Birds in their relation to Horticulture," to be opened by Mr. C. E. PEARSON. Should time permit, it is proposed also to have a short discussion on the future of the Club. Dr. HENRY, who has done so much to make known the Chinese flora, is to be the guest of the Club at an early date. Full particulars will be shortly announced.

THE "THOMAS ROCHFORD" MEMORIAL.—The members of the Turnford Hall Working Men's Institute, founded in 1896 by the late Mr. THOS. ROCHFORD, who died on October 12, 1901, have placed in their club-room a permanent memorial of their late beloved President. It is an oil painting, executed by Mr. FRY, of Camden Square, and bears the inscription:—"THOMAS ROCHFORD. Born 1849. Died 1901. Founder and first President of the Turnford Hall Nurseries Institute. Subscribed for and presented to the Institute by the members." The unveiling ceremony was performed on Thursday evening by Mr. JOSEPH ROCHFORD. Mr. H. KELSALL, general manager, presided, and Mr. T. P. TROUNCE, manager of the London and County Bank, delivered an interesting address on the life-work of the deceased gentleman, who, he said, was no ordinary man, but one endowed with exceptional attainments, and who seemed to be one of the favoured ones of the spirit of success. He was frank, and ever ready to assist by advice or otherwise those who came openly to him; but he disliked any who tried by subterfuge or deceit to secure his favour. His energy was not devoted to the accumulation of wealth alone, for he took in more land, and, as it were, scattered more seed, thus making more employment for reapers and gleaners. No man better deserved the fruits of his labour, and he was wont to mingle in the pastimes and the pleasures of his men, and his entire sympathy was with those who worked for him. Mr. E. B. BARNARD, Sawbridgeworth, who also addressed the meeting, described the late Mr. ROCHFORD as an idealist, who secured success in business and the esteem of all who knew him. Other gentlemen addressed the members, and an enlarged photograph by Mr. H. CLEMENTS, was gratefully accepted by the members, as were also one or two other gifts reminiscent of the deceased.

MR. C. HARMAN PAYNE.—We learn with much satisfaction that the sympathetic Foreign Secretary to the National Chrysanthemum Society, Mr. C. H. PAYNE, has received a fresh proof of the appreciation of his labours from the Government of the French Republic, which has appointed him Officer of the Order of the Merite Agricole. This distinction has been conferred upon him for his contribution to French literature on the Chrysanthemum, on the occasion of the last congress at Bordeaux, when he won the Silver-gilt Medal awarded to the best and most comprehensive report in the French language upon that interesting and extensive subject, the Chrysanthemum. But the French Government also, no doubt, wished to acknowledge the valuable aid which Mr. PAYNE rendered his French *confrères* in the formation, and later on in the organisation of their Society, which indeed is a very great success. We believe Mr. PAYNE is the first Englishman raised to the rank of Officer of an Order which is seldom bestowed upon foreigners of any nationality, and we congratulate him upon his good fortune, and much appreciate the kindly act of the French Government.

M. LOUIS GENTIL, who for three years filled the important post of Agronome et Surintendant des Plantations du Haut-Congo, and who last year was sent on a mission as Inspecteur Forestier de l'Etat Indépendant du Congo by the Belgian Government, has been appointed Chef des Serres et des Cultures Coloniales du Jardin Botanique de Bruxelles. After serving an apprenticeship in a Government school of horticulture, and staying for a time at the nursery of Messrs. J. VEITCH & SONS, Chelsea, Mr. GENTIL entered the Royal Gardens, Kew. During his stay in England, the Société Française d'Horticulture de Londres, of which institution he was a most active member, never had a more painstaking secretary.

THE SCOTTISH HORTICULTURAL ASSOCIATION proposes to celebrate its semi-jubilee by a dinner to be held on March 21, at 129, Princes Street, Edinburgh. We wish the event every success, and the society continued prosperity. The Convener of the Dinner Committee is Mr. A. CHALMERS, 24, Frederick Street, Edinburgh.

THE ANNUAL MEETING of the United Horticultural Benefit and Provident Society is to be held on Monday next, March 10, at 8 P.M., at the Caledonian Hotel, Adelphi Terrace, Strand. Mr. HERBERT J. CUTBUSH will preside.

THE SURVEYORS' INSTITUTE.—A paper was read by Mr. ROWLAND BERKELEY (Associate), entitled "Electric Railways and Street Compensation." A discussion followed, and was concluded, and a vote of thanks was unanimously passed to Mr. BERKELEY for his paper. The next ordinary general meeting will be held in the Lecture Hall of the Institution on Monday, March 10, when a paper will be read by Mr. C. H. BEDELLS (Fellow), entitled "Notes on the Insurance of Buildings against Fire." The chair will be taken at 8 o'clock.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—A large gathering of horticulturists will be held on Wednesday, Mar. 12, 1902, at the City Hall, Eberle Street, Dale Street, Liverpool, when R. J. HARVEY GIBSON, Esq., M.A., F.L.S., has kindly consented to preside. HARRY J. VEITCH, Esq., Treasurer, and GEORGE J. INGRAM, Esq., Secretary of the Institution, have promised to be present to give some account of the objects and advantages of this beneficent society. At the conclusion of the meeting, a smoking concert will be held, for which a large array of talented artistes have generously tendered their services. We confidently rely upon the united support of gardeners (private and market), seedsmen, nurserymen, and others interested in horticulture, so that the result may prove beneficial to the Institution, and creditable to the city of Liverpool and district. The officers and committee will gladly receive the names of intending life members, subscribers, and donors; and will supply admission tickets (1s. each), and any information required. *Charles Young, Chairman, West Derby; A. J. Crippin, Treasurer, Egremont; R. G. Waterman, Secretary, Woolton.*

COMING EXHIBITIONS.—Further schedules to hand include the following, viz., that of:—

THE ROYAL CALEDONIAN HORTICULTURAL SOCIETY, for their spring show, to be held on May 7 and 8, and their autumn show on September 10 and 11. At the spring show, in addition to 108 classes of the usual character, there is to be a very interesting competition among under-gardeners, as announced in our pages in August last. They are required to draw a plan to scale (40 feet to inch) for laying

out a piece of ground about twenty acres in extent (as shown on a sketch published in the schedule) for kitchen garden, flower garden, and pleasure grounds. The plans have to be returned to the secretary not later than April 1. We hope there will be a good number of competitors for the three prizes, £3, £2, and £1, that are offered. The great autumn exhibitions held in the Waverley Market, Edinburgh, are remarkable for the fine displays of fruit, vegetables, and cut flowers then shown, and the forthcoming event promises to be as good as previous ones. The schedule includes about 270 classes, and the prizes in the leading classes in each section are of a liberal character. We may refer to a special open competition, for which a sum of £10 is offered in three prizes by Mr. and Mrs. J. MARTIN WHITE, of Balruidery, Dundee. These are offered for the "best essay on the lasting qualities, the preservation and arrangement of different flowers, foliage, and plants in a cut state in water, in either town or country, and in the town distinct from the country, including a statement of the conditions of age, growth, weather, &c., for, and the methods of cutting such flowers, foliage, and plants, and their treatment afterwards, so as to last well; a description of the injurious effects of some on others when placed together in water, and suggestions as to their arrangement so as to show them to the best advantage, having regard both to economy and beauty." All essays must be in the hands of the secretary by August 1. If the first prize essay shows particular merit, the first prize may be increased. The secretary is Mr. P. MURRAY THOMSON, 5, York Place, Edinburgh.

THE CROYDON HORTICULTURAL SOCIETY will hold its annual show on July 22 in the grounds of Brickwood House. Roses are always a special feature at this show, and altogether there are 122 classes for these and for plants, fruits, and vegetables. The secretary is Mr. A. C. ROFFEY, 55, Church Road, Croydon.

THE WOKING HORTICULTURAL SOCIETY holds meetings on the second Thursday of each month for the reading of papers, and for competitions in a few classes arranged for subjects particularly in season. The syllabus of lectures to be given in the session commencing March 13 is an excellent one. The secretary is Mr. M. ROSE, Elm Villa, Woking Village, Woking.

ACACIA CULTRIFORMIS.—Mr. GENTLE, gr. to Mrs. DENISON, who exhibited sprays of this distinct and beautiful Acacia at the last meeting of the Royal Horticultural Society, informs us that the plant is ten or twelve years old, and that it is now in flower for the fourth time.

CORK INTERNATIONAL EXHIBITION.—From May till November of this year a great exhibition will be held in this thriving and progressive city. The attractions offered, both those of a business character as well as those of a recreative nature, are very numerous.

"BRITISH COCCIDÆ."—We have been kindly informed by a correspondent that this very useful work, from the pen of Mr. ROBERT NEWSTEAD, can be secured by sending one guinea to the Secretary of the Ray Society, Rev. Professor WILTSHIRE, 25, Granville Park, Lewisham, Kent.

EARLY FLOWERS IN ST. MARY'S ISLE, KIRK-CUDBRIGHT.—We have received from the head gardener to Captain J. HOPE, at St. Mary's Isle, a number of hardy flowers which have opened since the cold snap in early February. These include Arabis, Winter Aconite, He-

patiens, *Leucoium vernal*, double and single-flowered Snowdrops, *Crocus*, Primroses, *Polyanthus*, Blue Squills, *Jasminum nudiflorum*, *Laurustinus*, *Chimonanthus fragrans*, Violets, *Mahonia aquifolia*, Wallflowers, Heaths, Daisies, and *Helleborus roseus*. In the note sent by the gardener at St. Mary's Isle, Mr. J. JEFFREY, and inserted in last week's issue, p. 149, the word *Phloxes* should have been *Flaxes* (*Phormium*), much more tender plants.

BOTANY IN HUNGARY AND IN ROUMANIA.—We have become accustomed to the receipt of Japanese publications on horticulture, but Hungarian and Roumanian papers have not been so common. The first number of the *Magyar Botanikai Lapok* (*Ungarische Botanische Blätter*) is before us. The text is in Magyar, accompanied happily by a German translation. Amongst its contents we note a variety of the common Spruce, called *Abies* (syn. *Picea*) *ellipsocensis*, of BORBAS. The cone is represented as erect, but that is probably by mistake, and the branches are studded with small glands. Another variety is called var. *adenoclada*, BORBAS, who refers it, under the eccentric system of nomenclature adopted by some, as *Abies Abies* (L.). Certainly LINNÆUS never mentioned such a species. The other publication is entitled *Buletinul Erbarului Institutului Botanic din Bucuresti* (*Bulletin de l'Herbier de l'Institut Botanique de Bucarest*), edited by Prof. VLADESCO. The second language here made use of is French, and in some cases German.

VICTORIA TRICKERI, HORT.—This is now determined to be the *V. Cruziana* of D'ORBIGNY of Paraguay. It is much hardier than the Amazon species. The leaves are villous on the under surface. Seeds may be sown in water in February or the early part of March, in a temperature of 75°. The seedlings may be potted off in thumb-pots, and repotted when the first floating leaf appears, repotting at intervals till the season is sufficiently advanced to permit of their being planted in summer quarters. The water should have a temperature of 75° to 80°. Full details are given by Mr. TRICKER in the *American Florist* for December 21.

THE BEAUTIFICATION OF PARIS.—Paris will soon possess a large new park in the Champ de Mars. The Champ de Mars, known to those who have visited the Universal Exhibitions held there since 1867, is a rectangular area including nearly 11,000 acres situated to the east of Paris, and bounded on one side by the École Militaire, and on the other by the Seine, by the borders of which is the Eiffel tower. Until 1889 this large space served as an exercising ground for the troops of the Paris garrison. After the Exhibition of 1889, part of the buildings of that Exhibition (*Galerie des Machines*, *Palais des Arts Libéraux*, &c.), were preserved, and the Minister of War received as compensation some ground outside the fortifications of the city. The Champ de Mars remained partly unoccupied until 1900, when it was again covered with the Exhibition buildings. It seems now arranged by general consent not to have another Universal Exhibition, at least, not in the middle of Paris. It is therefore decided to use this large and often empty space as a park, and this, after long negotiations between the City of Paris and the State. The *Galerie des Machines* (*Galerie d'Alimentation* and *Salle des Fêtes* in 1900), and the other buildings are to be taken down, the ground cleared, and a park made with ornamental water, rock-work, plantations, &c., the whole forming a picturesque effect comparable to the *Buttes Chaumont* designed by ALPHAND. The

neighbouring land will be sold, and the purchasers required to erect handsome-looking houses. It is hoped thus to impart beauty to a quarter which hitherto has been dull, and even dangerous, owing to the low population attracted by the vicinity of the barracks and this deserted space. G. T. G.

DAWLISH.—The last addition to the *Home-land Handbooks* is devoted to Dawlish and the Estuary of the Exe, with notes on Chudleigh; by BEATRIX CRESSWELL, illustrated by GORDON HOME. This is the usual modern, chatty guide-book mentioning the objects of beauty and interest round the locality treated of. In an appendix will be found details of some of the screens preserved in the country churches, these Devonshire screens having for some time past been studied by the author. We are grateful, also, for accounts of some of the landed estates in the neighbourhood; these are, of course, not open to the public, though it is often possible to obtain permission to visit them. At Mamhead, according to the writer, "The first Ilex Oaks were grown, from Acorns brought over in 1696. I have been told that the avenue of Spanish Chestnuts, which leads up to the house on the Starecross side of the property, was grown from some Chestnuts brought home after the Peninsular War, but I cannot vouch for the accuracy of the assertion. The 'Lucombe Oak,' a hybrid of the Ilex, was first grown here by Mr. Lucombe, who was gardener at Mamhead, and since well known in the firm of Lucombe & Pince, whose beautiful gardens are near Exeter. . . . Here in 1775 Boswell came to stay; he mentions setting out 'on a visit to the Earl of Pembroke at Wilton, and my friend Mr. Temple at Mamhead, in Devonshire.' At that time Mamhead Park was in the possession of the first Earl of Lisburne. In Mamhead churchyard is an enormous Yew-tree, the most notable tree on the estate; its size and magnificence so impressed Boswell that he made a vow underneath it never to be drunk again." Of Powderham and Powderham Park we hear praise, and a brief notice that there are fine Oaks and Rhododendrons in the Park, but the chief plant wonder of the place is not mentioned at all. This is the giant *Eucalyptus coccifera*, already upwards of 40 feet high, and, we believe, still flourishing. We advise those who admire English scenery to visit for themselves the scenes commended in this book, whose charms are those of woodland, sea, and archaeology. This guide, and the others of the series, are published by The Homeland Association, Ltd., St. Bride's House, 24, Bride Lane, Fleet Street, E.C.

THE BRONVAUX MEDLAR.—M. JOUIN, in the number of the *Jardin* for January 20, gives some further details respecting this alleged graft hybrid. This Medlar is grafted on the Hawthorn. Immediately below the graft a branch (1) is developed which is neither that of a Medlar nor of a Hawthorn. Another branch (2) springs from the same point side by side with No. 1. A third branch (3) springs from the trunk of the tree on the opposite side to the two preceding branches. The lower part of this third branch presents the characters of the Hawthorn, but the upper portion differs from both the Hawthorn and the Medlar. Branch No. 1 has produced one shoot which in no wise differs from the Medlar, and also a forked branchlet, which has produced on one side an inflorescence of the Hawthorn, and on the other a corymb of eight Medlar flowers. These variations have been grafted in their turn, and remain constant. M. JOUIN describes in full some of these graft-hybrids,

together with illustrations. Thus this curious Medlar resembles the Adams' Laburnum, which excites so much surprise every spring. Since the discovery by Mr. WALTER GARDINER of the continuity of protoplasm, these cases have become a little more intelligible than they were before. At one time the cell was considered as a closed bag, so that the protoplasm of one cell had no direct communication with the contents of its neighbour. Now it has been proved that in very many cases there is direct continuity between the plasm of one cell and that of another, so that the whole plant may be looked on as one mass of plasm imperfectly separated into separate masses by cells with permeable walls.

"THE QUEENSLAND FLORA."—The fourth part of this useful publication, prepared by Mr. F. MANSON BAILEY, the Colonial Botanist, has just been issued. It is modelled on the same plan as the Colonial Floras, but differs from them in containing illustrations; thus in the present part we find representations of no fewer than eight species of *Nepenthes*, as *N. Kennedyana*, *Bernaysii*, *albo-lineata*, *Moorei*, *Jardinei*, *Rowanae*, *Aliae*, and *Cholmondeleyi*. How such a book could have been produced away from our large herbaria would be a matter of surprise if we had not recalled the fact that BENTHAM'S *Flora Australiensis* was at hand to guide the author. But in any case the production is a remarkable one, and confers the highest credit on Mr. BAILEY. The printers also deserve a meed of approbation, as the work is as well turned out as if it had been issued in London. The present part concludes the first volume, and is provided with a good index.

ROSE SHOWS IN 1902.—The following list of Rose show fixtures has been kindly forwarded by Mr. ED. MAWLEY:—June 11 (Wednesday), York (three days); June 24 (Tuesday), Holland Park, London, W., Rose Conference (R.H.S.) (two days); June 28 (Saturday), Maidstone and Windsor; June 30 (Monday), Canterbury; July 2 (Wednesday), Temple Gardens, London, E.C. (N.R.S.); Croydon, Hanley (two days), and Richmond (Surrey); July 3 (Thursday), Colchester and Norwich; July 4 (Friday), Exeter (N.R.S.); July 5 (Saturday), Sutton (Surrey); July 8 (Tuesday), Gloucester and Harrow; July 9 (Wednesday), Ealing, Farnham, Formby, Hereford, and Stevenage; July 10 (Thursday), Bath, Eltham, and Woodbridge; July 17 (Thursday), Helensburgh and Halifax; July 19 (Saturday), Manchester (N.R.S.); July 22 (Tuesday), Tibshelf; July 23 (Wednesday), Cardiff (two days). The above are all the dates that have as yet reached us of Rose shows and other horticultural exhibitions where Roses form a leading feature.

ARBOR-DAY IN BRITAIN.—An essay has reached us written by Mr. ELLIOTT TILL for the Society for the Protection of Birds (3, Hanover Square, W.) on the best means of establishing a "Bird and Arbor-Day" in the British Isles. The author, like another EVELYN, notes the depletion of the woodlands for ship and other building, and the waste of bird-life also. He pleads for the planting of souvenir and other trees, as well as for careful re-forestation to compensate for compulsory clearances. With regard to birds, Mr. TILL claims that they are valuable as insect-destroyers, as well as interesting for many other causes, and that the extirpation of at least the rarer sorts would be a real calamity. We cannot sympathise fully with the praise of clipped trees and vegetable

curiosities, but quite agree that children should be taught, by means of object-lessons, to study the uses both of birds and of trees, and to observe without destroying them. As regards the institution mentioned in the title the author says: "*Festina lente* is a good motto to bear in mind in the endeavour to advance Bird and Arbor-Day. Attempt it first in one or two counties. I suggest Surrey and Essex. The forces which operated to bring about Arbor-Days in America may perhaps be present in England, but in nothing like the same degree. The idea should grow gradually, not be forced; a natural growth will result if the idea be properly cultivated." The planting of fruit-trees by road-sides, as done on the continent, should also receive attention. In conclusion, we must mention the charming plates illustrative of trees and of a bird that are shown us in this pamphlet, whose aims command our sympathy.

FRUIT TO AUSTRALIA.—We learn from the *Liverpool Journal of Commerce* of February 24 that the Orient Pacific Company has issued a circular offering to take fruit and vegetables to Australia at a rate per box. The boxes are not to be larger than 2 feet 10 inches cubic measurement, and half-boxes are to be allowed if they do not exceed 1 foot 5 inches. The freight to Fremantle is to be 5s. per box, and 2s. 9d. per half-box; and to the other ports, 4s. 3d. and 2s. 3d. Arrangements will be made for the transhipment of boxes to such Australasian ports as the Company does not call at. It is quite likely that this may be the beginning of an important trade with the Colonies, for, though Australia produces a large amount of fruit on her own account, the seasons here and there are interchanged, and European fruit will come in when their trees are not in bearing.

AUSTRALIAN APPLES.—The following message has been received from Sydney, advising the following shipment of fruit from the Colonies:—By the Orient Co.'s SS. *Austral*, expected on 29th inst. in London, 16,000 boxes; by the P. & O. Co.'s SS. *Arcadia*, expected home about the 5th prox., 18,000 boxes.

FRUIT FROM THE CAPE.—It is pleasing to note the regular despatch of fruit from Cape Town. The last advices to hand state that, concerning the Union Castle Company's ship, *Dunvegan Castle*, which has brought 540 boxes of Plums, 520 of Peaches, 117 of Nectarines, 106 of Pears, 120 of Grapes, and 2 of Grenadillas; total, 1411 boxes.

FORESTRY.—The Right Hon. R. W. HANBURY, M.P., President of the Board of Agriculture, has appointed a departmental committee to enquire into and report as to the present position and future prospects of forestry, and the planting and management of woodlands in Great Britain, and to consider whether any measures might with advantage be taken, either by the provision of further educational facilities or otherwise, for their promotion and encouragement. The committee consists of the following gentlemen, viz.:—Mr. RONALD C. MUNRO-FERGUSON, M.P. (Chairman), Sir JOHN F. L. ROLLESTON, M.P., Mr. EDWARD STAFFORD HOWARD, C.B., a Commissioner of his Majesty's Woods, Forests, and Land Revenues; Professor W. SCHLICH, C.I.E., Ph.D., Professor of Forestry, Royal Indian Engineering College, Cooper's Hill; Colonel FREDERICK BAILEY, R.E., Lecturer on Forestry, Edinburgh University; Professor JOHN R. CAMPBELL, B.Sc., an Assistant Secretary to the Department of Agriculture and other Industries, and Technical Instruction for Ireland; Mr. JOHN HERBERT LEWIS, M.P., Mr.

GEORGE MARSHALL, and Dr. WILLIAM SOMERVILLE, an Assistant Secretary to the Board of Agriculture. Mr. REGINALD H. HOOKER, of the Board of Agriculture, is the Secretary to the committee.

HORTICULTURISTS AND THE SALE OF POISONS.—At the Newcastle-under-Lyme Police-court, on Monday, March 3, two florists and horticulturists, of Newcastle, were summoned at the instance of the Pharmaceutical Society, under Section 17 of the Pharmacy Act, 1868, for selling a poisonous vegetable alkaloid without a label being attached to the vessel in which it was supplied bearing the word poison, and the name and address of the seller. A pint of XI-All insecticide was supplied in an old brandy-bottle without any label except one relating to brandy. No warning was given. MORGAN used a little of the insecticide and placed the bottle on a bench in the potting-shed of his employer's garden. On January 23 a man named THOMAS BULLOCK was working in the garden, and some beer which he sent for was also put in the potting-shed. The beer was in a bottle very similar to that containing the insecticide, and BULLOCK in mistake drank some of the latter and died in a short time. After a long hearing, the Chairman said the Bench were unanimous that an offence had been proved, and fined the defendants £2 and costs. *Journal of Horticulture.*

CULTURAL MEMORANDUM.

PROPAGATING POINSETTIAS.

It is not an uncommon error to start this plant into growth at too early a date, with the result that it gets tall, and by the time it should begin to form its bracts, it has begun to lose vigour, and does not form as fine heads as a younger plant would do. If cuttings be put in during June, or even as late as July, they will produce fine heads of bracts, provided the treatment is good. An important point is good strong cuttings, which can only be obtained by giving early attention to the stock plants. If the stock of plants is limited, some cuttings may be put in early, and the tops taken off later on. The plants that have been dried off may be started at this season by placing them in a light, warm position, and syringing them regularly, but not affording much, if any, water at the roots until growth has begun. Some of the old soil may be replaced with fresh loamy material. The first growths are usually thin, and may be cut off, and when they start again the shoots may be thinned out, leaving from three to five on a plant. As stated above, if the stock of plants is short, the early growths may be used for cuttings. There is little difficulty in propagating Poinsettias if the accommodation is suitable, viz., a close garden-frame set on a dung-bed, having a bottom-heat of 80°; but I prefer an indoor propagating-pit, this being more under control in all weathers, for it is most essential that they should have careful attention.

The cuttings should be inserted singly in 3-inch pots filled with a compost consisting of loam and leaf-mould, with enough sharp sand as will make it porous. Cut the shoots close under a joint. Those stems that have made much growth will be hollow between the joints, but that is no detriment if they are carefully treated, for they will root as freely as others, cut close to the old wood. Some dry sand should be applied to the base of the cuttings as soon as they are taken off; this

stops bleeding. [It is good practice to bury the cuttings head downwards in fairly dry sand till all are ready for dibbling in the cutting-pots. Ed.] If put into the close propagating-pit before they get withered, and given a slight sprinkling, and more water after the base of the cuttings has dried up, they will root without losing a leaf. The advantage of having the strong cuttings is, that they will have large leaves down to the base of the plants. Any early-struck plants which have their tops taken off, if cut down to about 4 inches from the pots, will break with two or three shoots each, and make useful plants for growing in large pots. Care must be taken that the cuttings are removed from the close pit as soon as rooted, and after a few days they may be fully exposed to the sun. With careful attention to affording water, Poinsettias may be grown on through the summer without any shading, and when the sun gets less powerful, they should be kept up as near the glass as possible. They will require no artificial heat until the nights get cold; but care must be taken that they are not left in a cold-house too long, for though they may not appear to suffer at the time, they will lose their leaves as soon as given more warmth. A. Hemsley.

HOME CORRESPONDENCE.

PLANTING FRUIT-TREES ON THE SIDES OF ROADS.—I was glad to read Mr. F. W. Burbidge's note at p. 140, in the issue of the *Gardeners' Chronicle* for March 1, recommending the planting of fruit trees at the sides of public roads. I hope this matter will be taken up by landowners, and the practice more generally adopted. I have several times advocated this in the pages of the *Gardeners' Chronicle*, but I fear without result so far; but I would like to say again, that not only roadsides but hedgerows and divisions of fields everywhere in all parts of the country, where nothing profitable or beautiful is growing, might with advantage, and without any large outlay of money, be planted with standard trees of Apple, Pear, Plum, Cherry, Damson, and other fruits; the landscape would be beautified in a very short space of time, and profitable returns would come in due time. I am told that in some parts of France many miles on both sides of the roads are planted with Cherry-trees, which afford abundance of fruit, and have a beautiful effect when in bloom. I believe that with the exception of sparrows, the French are not troubled so much during the fruit season with birds as we in England. If this practice were common throughout the country, its aspect would be much improved, to say nothing of the profit accruing to the owner of the trees. *Bailey Wadds, Birdsall, York.*

WINTER-FLOWERING CARNATIONS.—Replying to Mr. Slade's query regarding Mrs. Leopold de Rothschild, I have met with only one variety under this name, and it is undoubtedly the same variety that is known as Madame Thérèse Franco. With regard to the merits of this Carnation, Mr. Slade is not alone in his opinion, for I have heard some trade growers make the complaint that it does not flower so freely as they could wish. On the other hand, I find that some consider it to be the best pink coloured variety yet raised. I myself should still give the preference to the old favourite Miss Joliffe; or rather the improved variety of it, for in this the side shoots follow on, and come into flower much sooner than do those of Mrs. L. de Rothschild. Mr. Slade refers to the number of side shoots that this produces, and if he would pot the plants on, all of these side shoots would come into flower in due time. The spring struck plants do not have sufficient time for these side shoots to flower until the following spring;

but those propagated in October and stopped the following May will, if potted on, make fine bushy plants, which should flower well the following winter. I have seen it grown and flowered in 7-inch pots most satisfactorily. While writing about Carnations, I should like to say a word in favour of C. Countess of Warwick, a variety which was raised from Winter Cheer, fertilised with pollen of a seedling, the result of an earlier cross with Winter Cheer and Uriah Pike. It is not quite so dwarf as the seed parent, but it is equally free-flowering, and the flowers are of a bright crimson colour, with broad petals and a perfect calyx. I have found Winter Cheer to seed freely, and have raised some good varieties from it; but although I have persevered, I have never succeeded in getting good seed from Miss Jolliffe, while in others which appeared less likely to seed have proved very prolific. A. Hemsley.

BEGONIA GLOIRE DE LORRAINE AS A TABLE PLANT.—I was interested in reading the article on p. 89 concerning table decorations, but I was surprised that the writer made no mention of so good a plant for this purpose as Begonia Gloire de Lorraine. This plant when in flower has a pretty effect either by daylight or artificial light. The plants should be grown in 6-inch pots to a height of 15 inches. Small sprays of flowers and leaves may also be placed in small vases, or used in tracery, no other blooms being used. C. L. Branson.

GLADIOLUS INJURED BY FUMIGATION.—I enclose a few leaves of forms of Gladiolus nanus, which, like those of Watsonia, I showed last year, have become damaged by a very slight fumigation. It is singular that these things should suffer when young fronds of Ferns growing in the same house are uninjured. It cannot, I think, be too widely known that these plants cannot stand fumigation with tobacco or preparations thereof without injury. Is there any peculiarity in the cuticle of the leaf that would account for this? The inner cellular tissues have quite collapsed. I have noted that many Cape plants—particularly *Gastronema sanguineum*—are similarly affected when fumigated. Geo. B. Mallett, Colchester.

THE WET v. STALE EGG.—Since the appearance of the "Wet v. Stale Egg" letter in your recent issue and other papers, I have received several hundreds of letters asking the nature of water-glass, and where it can be obtained. Water-glass is a silicate of soda, and is supplied by many wholesale as well as retail chemists, and is used for other trade purposes besides egg-preserving. I may say that a leaflet has been issued by the Irish Board of Agriculture, and also that a very explicit pamphlet has been printed by the Leicestershire Egg-preserving Depot, Hineckley, price 4½d., and this I shall be pleased to forward post-free to anyone who may desire detailed information. K. B. Baghot-De la Bere, Burbage Hall, Leicestershire.

ARTIFICIAL MANURES FOR SWEET PEAS.—Last season my Sweet Peas were doing very badly, which I attributed to the poor kind of manure at my disposal—peat-moss litter from the stables. The dry season, together with the dry state of the manure, prevented it decomposing in the ground, as was observed in the autumn, when it was turned up with the spade almost as dry as when it was dug in. Having some artificial manure by me, the same as I use for Pear-trees, consisting of one part muriate of potash and two parts mineral superphosphate of lime, I gave them a sprinkling with this every fortnight, which was well watered in. The result was very marked, for the plants grew vigorously, flowered profusely, and the blooms were of a much brighter colour than usual, and very large in size, on long stalks; but they lacked substance, and would not stand the bright sunshine without becoming discoloured; dampness likewise caused them to decay. The seed-pods were kept cut off as often as time would allow, excepting on one occasion, when they were left rather longer than usual; I noticed then every pod

was well filled with small seeds, which I think goes to prove it an excellent manure for culinary varieties. In another part of the garden I sowed some fifty varieties on a well-prepared border, for the purpose of a screen. Being anxious to get quick growth, and with the view of testing the efficacy of the different manures, I gave them water every fortnight with sulphate of ammonia in it, of a strength of 2 oz. to 4 gallons of water. The result was a much closer jointed and firmer growth, but they did not bloom so freely, neither were the blooms so large as those dressed with the muriate of potash; but the colour of the flowers was equally good, and I found that they lasted much longer when cut, and also when left on the haulm. I do not say these manures would produce the same results on all kinds of soil; it would be interesting to know the different effects on different soils. To understand the application of manures thoroughly, we should all know the chemical analysis of the soil, so as to be able to add those constituents in which it is deficient. A great many of us give indiscriminately the same manure to everything, but I am not a believer in the same salve for every sore. Here the soil in both cases was the same, that is, a rather heavy, chalky nature. I have not as yet tried here a mixture of two parts kainit and one part nitrate of soda, but did so some four years ago with Sweet Peas growing on a light sandy loam, sprinkling a little along the rows, not too close to the plants, for fear of injuring them, and applying water afterwards, repeating this application every ten days. The results in this case were good; there was no damping or scalding of the flowers, and they were of good size and colour. W. H. Clarke, Aston Rowant Gardens, Oxon.

FLORISTS' FLOWERS AT THE DRILL HALL.—It is exceedingly interesting to observe in the arrangements of the Royal Horticultural Society for the present year, how the various special societies are sheltering themselves under its wing. The National Auricula Society has stuck to the Drill Hall loyally; the National Tulip Society, hitherto holding its southern competitions at the Temple Show, where they were amidst the immense wealth of exhibits somewhat lost, now has them at the Drill Hall on May 20. The National Carnation Society, evidently not successful in its flirtations with the grand lady of Sydenham Hill, returns to its old love, the Royal Horticultural Society, on July 22, with a big schedule; and on September 2, the National Dahlia Society brings its great show of flowers from the Crystal Palace to the Drill Hall. What remarkable additions to the Fellows' privileges do these shows present? Whatever may be the deficiencies of the Drill Hall, at least flowers will keep fresh longer there than anywhere else. A. D.

THE FLEUR-DE-LYS.—Amongst the many interesting and beautiful buildings that abound in the city of Reims, none is more worthy of attention than the ancient Abbey Church of St. Remi, founded by Clovis and Clotilda in the first part of the sixth century. When visiting this church with some friends a few years since, we were impressed by the curious appearance of an old piece of tapestry, which hung on the wall of the sacristy. It was of extremely early date, and the scene represented on the arras was apparently intended to commemorate the triumphant return of some kingly warrior to his people. The hero was on horseback; close behind him rode a retainer bearing the royal shield, on which were displayed three emblems, which at the first casual glance we accepted as the orthodox badge of the Kings of France—the Fleur-de-Lys; but a closer inspection revealed the fact that these were no "Lilies of France," but three unmistakable toads, grouped heraldically, their eyes were clearly defined, and their limbs attached to their bodies. On reflection, one can perceive how the conventional Fleur-de-Lys can be the natural evolution of such a weird device. This can be tested by copying the Fleur-de-Lys in its most primitive form,

and then sketching the outline of a toad in as simple and conventional a manner as possible, adding the eyes; and then comparing the two drawings, when the likeness between them is very noticeable. The unusual interest we displayed in the old tapestry at Reims seemed to amuse our guide, the sacristan. He told us it was stated to be one of the most ancient specimens of the handicraft still preserved to France, and that the badge on the royal shield was certainly intended to represent three toads, which was the primitive cognizance of the Kings of France, until Clovis transformed the reptiles into the conventional Fleur-de-Lys. On consulting Murray's *Handbook of France* later in the day, we read therein but a brief description of the old tapestry, but what little account there was fully corroborated all the sacristan had related concerning the traditional evolution of the Fleur-de-Lys. I have often seen the origin of the Fleur-de-Lys ascribed to the Lily, and the Iris. Eliezer Edwards, in his dictionary of *Words, Facts and Phrases*, says of it: "Louis VII. adopted the Iris as his badge when he formed the crusade, which led to its being called Fleur-de-Louis. This in the course of time has been corrupted to Fleur-de-Lys, the name it still retains in France, and in the southern parts of England." The evolution of the Fleur-de-Lys from a flower appears to be the universal and accepted tradition, and never, except at Reims, have I heard it suggested that after all it may be an idealised representation of the humble toad. E. M. W.

RAINFALL IN 1901 IN CENTRAL IRELAND.—Some of your readers may like to know the amount of the rainfall during 1901 at Belvedere, West Meath, which is near the centre of Ireland:—

| Month. | Total Depth. | Greatest fall in 24 Hours. | Number of Days on which '01 or more fell. |
|---------------|--------------|----------------------------|---|
| | Inches. | Depth. | Date. |
| January ... | 3.70 | .87 | 18 |
| February ... | 1.81 | .35 | 1 |
| March ... | 3.48 | .56 | 29 |
| April ... | 2.24 | .80 | 2 |
| May ... | 1.89 | .37 | 7 |
| June ... | 2.74 | 1.30 | 22 |
| July ... | 0.91 | .56 | 1 |
| August ... | 2.71 | .58 | 9 |
| September ... | 5.48 | 1.20 | 17 |
| October ... | 3.44 | .65 | 29 |
| November ... | 3.41 | 2.05 | 11 |
| December ... | 3.70 | .65 | 7 |
| Total ... | 35.54 | ... | 197 |

C. Brinsley-Marley.

THE RAINFALL AT SHIPLEY HALL, DERBY, IN 1901.—January, 1.61 in.; February, 1.38 in.; March, 2.21 in.; April, 1.76 in.; May, 1.02 in.; June, 1.79 in.; July, 5.05 in.; August, 1.52 in.; September, 1.45 in.; October, 1.55 in.; November, 2.31 in.; December, 4.25 in. Total for the year, 25.90 in. This quantity of rain and snow is almost as much below the average as that of 1900 was above it. July, as will be seen, was the wettest month, usurping in this respect the position taken by August in the previous year. More than half the July total fell in two consecutive days, viz., the 25th and 26th, when the falls were respectively 1.15 and 1.54 in. Part of the December record was due to the extraordinary and disastrous snowstorm of the 13th, in which over 1 foot of snow fell in the course of a very few hours, the snow being in that condition when it sticks closely to anything on which it may fall. J. C. Tallack.

PEAS AND MANURE.—Whatever kind of manure be applied to Peas, it should be well decayed and thoroughly mixed with the soil, which should be double dug or trenched. A thick layer of manure beneath the roots of Peas if it cakes in dry weather does more harm than good, causing abundant mildew; but a mulch applied to the soil alongside the rows, and water applied in dry weather, is of great assistance. My experience in Pea-growing is not limited to one garden or kind of soil, and

I have been obliged to produce good Peas from the end of May till late in the season. The surest method by which Peas may be obtained in quantity is to treat the land in the manner stated, and not put the manure in layers. Many gardeners believe in the efficacy of layers of manure at the bottom of trenches in conserving moisture in the soil, but of this idea I am rather doubtful, and prefer to mix it with the whole body of soil. L.

RETARDED LILY OF THE VALLEY.—With regard to "Midlands" note on p. 99, the thought has occurred to me, do people carry out properly the directions given them before they begin to think there are trade secrets with regard to the successful cultivation of this or that plant? I think any good firm who sells retarded plants will, if asked, always give directions as to the subsequent treatment necessary, and do in some cases send out printed directions with the plants. In my own case, not having had any experience with retarded crowns of Lily of the Valley, and hearing quite diverse opinions from those of my friends who had, I asked the firm who supplied me if any special treatment was required, and the answer was, "Nothing beyond the directions printed in catalogue." As this batch was wanted for a special occasion, I was

plant-houses or for decorating ball-rooms, as well as for affording stems for cutting. In this method of cultivation, the plants must be supplied with liquid-manure at frequent intervals, or the foliage will become yellow and stunted. As a basket plant, or for training along the rafters of the conservatory or stove-house, this species is unrivalled. Another use for the plant is for bordering the plant-stages or hiding the hot-water pipes; and when associated with *Oplismenus Barmanni variegata* in the stove, it is very pleasing. H. T. Martin.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

FEBRUARY 25.—*Present*: A. D. Michael, Esq., in the chair; Rev. W. Wilks, Messrs. Saunders, Douglas, Bennett-Poë, Odell, Chapman, Hooper, Holmes, Nicholson, Worsdell, Boulger, Bowles, Carruthers (visitor), Drs. Müller, Rendle, Cooke, and Masters.

Diseased Leaves of Odontoglossum.—Mr. CHAPMAN showed leaves showing discoloration and shrivelling of the leaf-tips, attributable to excessive moisture and unfavourable climatic conditions. There was no trace of fungus.

red-spider and thrips, for which the application of tobacco-water and soft-soap as a wash was recommended. (2) Leaves of bulbous plant from Burmah. These were marked by red streaks, and ultimately by the decay and shrivelling of the tip of the leaf. The appearances were such as are occasioned by thrip, for which fumigation with tobacco or X.L. All is very effectual. (3) *Pelargonium*-leaves discoloured and shrivelled. No insect or fungus could be found on these leaves, the condition of which was attributed to unfavourable conditions of light, temperature, moisture, or all combined.

Cyclamen Flowers, Synanthus in.—Mr. J. S. DAVIS sent flowers of *Cyclamen* more or less united one to another, and with leaves developed on the flower-stalk. Although the appearances are far from uncommon, it is not easy to assign a definite cause for their production.

Fasciated Holly.—Mrs. MORLEY, Southborough, sent a specimen of this malformation, due to excessive growth. It presented no special peculiarities.

The Wood Leopard Moth.—Mr. A. D. WEBSTER sent specimens from Greenwich Park, to show how severely the trees were suffering from the effects of this tunnelling caterpillar.

Bacteriosis in Carnations.—Dr. COOKE reported as follows on some specimens exhibited at the last meeting:—"The *Carnation*-leaves sent to the last meeting are undoubtedly affected by the disease described as *Bacteriosis*. The appearance of the leaves is strikingly like that figured in the *Bulletin of the U.S.A. Experiment Station, Purdue University*, May 1, 1896, p. 549, and the minute organisms, whatever they may be, are similar. The name given to the parasite is *Bacterium Dianthi*. The disease is said to enter the plants chiefly through the punctures made by aphides, and the suggestions made are that the plants may be kept essentially free from the disease by keeping the foliage dry, and preventing the presence of aphides. Overhead spraying should only be done occasionally on bright days, with water containing a small amount of ammoniacal copper carbonate."

Germination of the Seeds of Crinum and other Amaryllids.—Mr. WORSLEY contributed a paper accompanied by illustrations. Mr. WORSLEY contends that the structure usually considered a cotyledon is not truly so named, for it has no counterpart among dicotyledons, and it does not perform the functions of a cotyledon. Moreover, Mr. WORSLEY thinks that "in comparative anatomy, function is a safer guide than locality."

New Species of Hippeastrum.—Mr. WORSLEY showed a flower of this supposed new species, with the following note:—

"*Hippeastrum Kromeri.*—This unrecorded species was introduced by Mr. Kromer of the Roxanna Nurseries, W. Croydon, who both presented me with a bulb and sent flowers of other bulbs not showing any divergence. It was gathered in the highlands of Minas Geraes, Brazil, on the banks of the Upper Rio São Francisco. It holds an intermediate position between the *rutulum*-regime group, and the epiphytal group inhabiting the Organ Mountains. It seems nearest akin, geographically and generally, with *H. correiense* (Borg. *Hexand.*, 9)."

Air-canals in Nymphæas.—The arrangement of the air-canals here shown, fig. 49, formed the subject of a communication to the Scientific Committee at its previous meeting, and will be discussed in detail in a future number of the *Journal of the R.H.S.*

BOLTON HORTICULTURAL AND CHRYSANTHEMUM.

FEBRUARY 11.—The adjourned general meeting of this society was held on the above date. The statement of accounts for the past year was adopted, showing a nett loss of £25 0s. 9d. on the year's working. It was unanimously agreed that the retiring President (Thos. Walker, Esq.), be asked to accept the presidency for the ensuing year. Mr. Smith was re-elected Chairman; Mr. Shore was re-elected Treasurer; Mr. H. Makin was elected Secretary; Messrs. Mather and Hay the Auditors; half of the committee were also elected. It was also resolved that the secretary of this society be elected at its annual general meeting. The full address of the new secretary is 628, St. Helen's Road, Bolton.

BECKENHAM HORTICULTURAL.

FEBRUARY 11.—A. D. Hall, Esq., M.A., Principal of the South Eastern Agricultural College, Wye, delivered a lecture on "Soils, Cultivation, and Water Supply." The importance of good soil, and the reasons of the difference in their value, were briefly alluded to; after which the lecturer applied his remarks more particularly to the soils of the district.

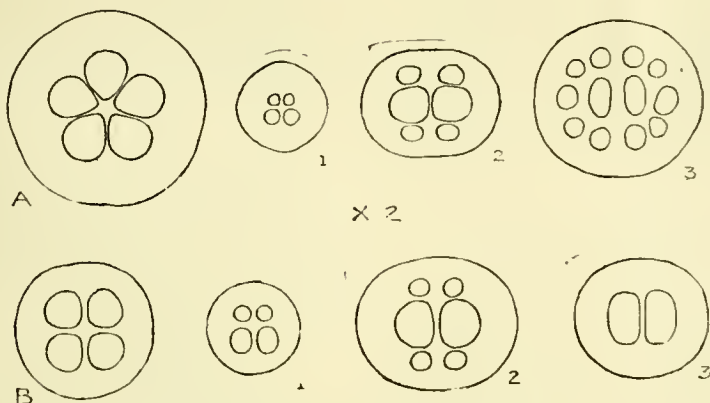


FIG. 49.—AIR-CANALS OF NYMPHÆAS.

A, B, Plan of section of flower-stalks. 1, 2, 3, Plan of arrangement in leaf-stalks.

very particular that the treatment recommended was carried out in every detail, and the result was the finest lot of Lily of the Valley, with plenty of healthy foliage, I had ever had in mid-winter. I have determined to always use retarded crowns for early forcing. To my mind, success in plant growing, as in other things, is brought about by strict attention to little details, and by allowing nothing to be too much trouble, remembering what is worth doing is worth doing well. J. G. W., Bessborough Gardens, Ireland.

ASPARAGUS SPRENGERI.—There is no ever-green plant of a decumbent character that can be put to more varied uses than *Asparagus Sprengeri*, and there is no plant cultivated under glass that will thrive better under adverse conditions. It will grow in the stove or the cold greenhouse, provided plenty of water, a suitable soil, and good drainage are afforded. When market-gardeners take up the extensive cultivation of a certain plant, as is the case with this plant, we may know that there is a good demand for it, and that there is "money in it." Well grown plants produce sprays of light green, feathery foliage, of 4 to 5 feet in length. Liberal treatment is required in order to obtain these results. Where large quantities are required, it is advisable to provide boxes or confined borders in which to plant, where the fleshy, tuber-like roots may ramble in search of nutriment. The soil should largely consist of friable loam, sand, and mortar-rubble. The plant may also be cultivated in pots for the embellishment of

Alleged Hybrid between Pea and Dwarf Bean.—Dr. MASTERS showed, on behalf of Mr. SMYTHE, a Pea-like seed raised, as was stated, between a dwarf Bean and one of the culinary Peas. The seeds of the Bean-parent were shown, in the form of small, flattened, kidney-shaped seeds, of a shining chestnut-brown colour. The supposed hybrid seed resembled a smooth, round Pea in size, form, and colour. As there was only one seed available, no minute examination was made, but the seed was forwarded to Chiswick to be grown and reported on.

Narcissus poeticus var. ornatus.—Mr. JENKINS sent flowers of this variety to show the manner in which the coloured edge of the corona was eaten off by slugs, leaving the yellow cup untouched. Whether the slugs are attracted by the reddish colour or seductive flavour of the rim of the corona, or by some other inducement, is a matter for investigation.

Gnaw on Esculus sp.—From the Botanic Garden, Bath, came a globular woody excrescence crowded with buds and contracted shoots. The tree is reported to bear very numerous such growths, from some of which the flowers protrude, so that their appearance is at that period peculiar and attractive. It was suggested that these outgrowths might be the result of the irritation set up by mites or by fungus (*Exoascus*). [See p. 157 of our present issue.]

Gnaw on Allamanda.—A similar production on the branch of an *Allamanda* was shown from Mr. Bedford, Straffan Gardens, Kildare; but in this case there were no buds or shoots. It was suggested that the irritation occasioned by ants was competent to induce such growths.

Diseased Leaves.—Miss DRYDEN sent various leaves, as follows:—(1) Violet leaves. These were affected with

WEYBRIDGE GARDENERS' IMPROVEMENT.

FEBRUARY 14.—At the invitation of the committee of the above society, Mr. Richard Dean, V.M.H., delivered an address at the Public Hall on "Floriculture and Florists during the past Fifty Years." Mr. J. Bilney was in the chair, and the attendance a very large one.

WARGRAVE GARDENERS'.

FEBRUARY 19.—The meeting on the above date was largely attended. Mr. H. G. Cox, Hon. Sec. of the Reading Gardeners' Association, gave an interesting lecture upon "The Primula," illustrated with a series of forty-one lantern-slides.

He traced the evolution of this popular plant from its introduction into this country in 1819 to the present day. General directions for culture as practised at Messrs. Sutton's nursery were given, and short references made to *P. stellata*, *P. obconica*, *P. Sieboldi*, and *P. floribunda*.

Among the excellent exhibits was a group of Primulas, by Mr. BRODIE, gr. at Wargrave Hill, which was awarded the Society's Cultural Certificate. Four new members were elected.

BRIGHTON AND SUSSEX HORTICULTURAL.

FEBRUARY 20.—The monthly meeting of this society was held at the Imperial Hotel, Brighton, on the above date, and the subject before the members was entitled "A Talk on the Chrysanthemum," by Mr. H. J. Jones, of Ryecroft Nursery, Lewisham. There was a large gathering of members, and the Chair was filled by Mr. Miles.

Mr. Jones' discourse on the cultivation and exhibition of the Chrysanthemum covered more than two hours, and was greatly appreciated by his audience.

LINNEAN.

FEBRUARY 20.—The Rev. T. R. R. STEBBING, M.A., F.R.S., in the Chair.

On behalf of Mr. G. M. THOMSON, F.L.S., of Dunedin, N.Z., the Secretary exhibited a series of photographs of New Zealand flowers, including several species of "Mountain Daisy," *Celmisia coriacea*, *C. ramulosa*, and *C. Haastii*; *Olearia insignis*, *Veronica biformis*, and *Clematis indivisa*. The alpine flora of these islands included a number of beautiful plants, many of them, like the *Raoulia* (or Vegetable Sheep), producing white blossoms in such profusion as to be conspicuous at a considerable distance. One of the most noticeable was the great white Buttercup, *Ranunculus Lyallii*, commonly known as the Mount Cook Lily, of which two photographs were shown.

In connection with the plants, some observations were made on the birds which visit them, e.g., the Bell-bird or "Korimako," *Anthornis melanura*, the Grey Warbler, *Gerygone flavirostris*, the Pied Fantail, *Rhipidura flabellifera*, and the Yellow-breasted Tit, *Petrarca macrocephala*. Of these, the first-named was observed to assist in the fertilisation of the native *Fuchsia*s, on quitting which the feathers of the head were seen to be stained with the bright blue pollen of the flowers. A favourite nesting-site of the Tit, *Petrarca macrocephala* was said to be immediately under the head of the Ti-tree, *Cordyline australis*, a good photograph of which was likewise exhibited.

A paper was read by Dr. J. E. DUERDEN on "The Internal Structure and Histology of *Bunodeopsis globulifera*, Verrill, a West Indian Sea Anemone."

Mr. B. DAYTON JACKSON, Sec. L.S., in a "Report on the Botanical Publications of the United Kingdom as a part of the International Catalogue of Scientific Literature," gave the history of botanic bibliography from the time of Linnaeus, mentioning the admirable catalogue by Dryander of Sir Joseph Bank's library, and passing on to the Royal Society's *Catalogue of Scientific Papers*, at present consisting of eleven volumes, ranging from 1800-1883, the record of the last seventeen years being in course of compilation.

The genesis of the *International Catalogue of Scientific Literature* was then briefly described, and the means adopted for the collection and classification of titles given. The Linnean Society had contributed the titles of papers and books issued within the United Kingdom, amounting to about 2,300, and the first part of the volume devoted to botany for 1901 was now in the hands of the printers, for early publication.

A paper by Miss LETTICE DIGBY, of the Biological Laboratory, Royal College of Science, was read on her behalf by Mr. J. E. S. Moore, "On the Structure and Affinities of some Gastropoda from Lake Tanganyika belonging to the genera *Chytia* and *Limnotrochus*."

READING & DISTRICT GARDENERS'.

FEBRUARY 24.—A pleasing ceremony took place at the ordinary meeting of the members on the above date, Mr. H. G. Cox, the energetic Secretary, being the recipient of a handsome testimonial, as a token of the appreciation felt by the members of his valuable services to the Association, which have now extended

over a period of some years; Mrs. Cox also was presented with a handsome solid silver tea service in morocco case, while to Mr. Cox himself a valuable half-hunter gold watch was handed. The gifts were accompanied by a framed illuminated address, bearing the photographs and the names of all the working members of the Association. The presentation was made in the presence of a large gathering of members, Mr. Leonard Sutton presiding.

Mr. L. Sutton, speaking on behalf of the members, expressed their indebtedness to Mr. Cox for his work as Secretary, and his services since he had been a member of the Association. He assured Mr. Cox of the great appreciation they all felt for what he had done. He knew from Mr. Cox's work outside the Association what a difficult matter it must have been for him to find the time for the work in connection with the Association. He (the President) was glad that one of the presents was for Mrs. Cox. The inscription was as follows:—"We, the undersigned members of the Reading and District Gardeners' Mutual Improvement Association, wishing to express our appreciation of the services rendered by Mr. H. G. Cox as Secretary, have this day presented him and Mrs. Cox with a silver tea service and gold watch as a token of our esteem and regard." Then followed a list of the working members of the Association.

Mr. Stanton, being called upon to say a few words, remarked that Mr. Cox had done a great deal for the Association, and had, in fact, made it what it was, the first in the country, there being now over 200 members. Mr. Stanton spoke of the appropriateness of the two presents, and mentioned that the way in which the subscriptions had come in was very creditable to the society. Over 150 persons had contributed.

Mr. Cox responded on behalf of himself and wife. It might interest the members, he said, to be reminded that the first meeting of the Association was held on December 6, 1888, when fifty-four members were elected. There were now 229 names upon the books, and there were three new members to be elected that evening. He had no doubt that at the present time the Association was the strongest of its kind in the country.

The ordinary business of the evening was then proceeded with.

BRISTOL AND DISTRICT GARDENERS'.

FEBRUARY 27.—A good meeting was held at St. John's Rooms on the above date, when Mr. J. C. House, of Westbury-on-Trym, delivered a lecture on the "Violet." The Bristol amateurs were invited to attend, and received a cordial welcome from their professional brethren. Mr. House has made a special study of the sweet Violet. Many people, the lecturer remarked, were under the impression that there was a deep secret concerning the cultivation of Violets, which he admitted, but which he said was that of "pains-taking" in every detail, and in doing everything needful, well. A clear atmosphere, suitable soil, and a natural position were the essential conditions. He recommended propagation by runners, put in during the autumn in sandy soil, covered with a frame and partly shaded during the first few days, and if possible facing south; planting the roots out about the third week of April, firming the soil round them, and keeping them well watered during the summer months. The best time for gathering the blooms was in the early morning or late in the evening. The lecturer also described several of the insect pests and diseases which the Violet is subject to, and gave the means for their prevention and eradication.

GLOUCESTERSHIRE ROOT, FRUIT, AND CHRYSANTHEMUM.

MARCH 1.—The annual meeting of this Society was held in Gloucester on the above date. The balance-sheet showed total receipts £328 16s. 7d., and expenditure (which included £202 15s. paid away in prizes) £308 19s. 4d.; leaving a balance in the bank of £19 17s. 3d., the largest the Society has ever had. It was acknowledged that this was due to the energetic efforts of Mr. S. S. Starr, the secretary, who had completely resuscitated the Society since his appointment some few years ago.

The Chairman (Mr. William Friday) was re-elected to that office for the seventeenth time in succession, and all the other officers were re-elected.

In arranging the schedule of prizes, some correspondence was read by the Secretary from Messrs. Sutton & Sons, Reading, with reference to certain altered conditions on which they were prepared to offer their prizes, namely, "that no exhibitor could claim Messrs. Sutton's prize who also exhibited at the same show, or in connection with the same Society, roots or green crops which are the produce of seeds supplied by other seedsmen." The Secretary said that similar conditions were also imposed by Messrs. Webb & Sons in connection with their prizes. It was resolved by a large majority of those present that the prizes of these seedsmen be not accepted on those terms.

DEVON AND EXETER GARDENERS'.

"HYBRIDISATION: Its Bearing on Gardeners, Botanists, and the Commercial World," was the subject of the lecture by Mr. G. Lee, gr., Upton Leigh, at the last meeting of the Association. Science, said Mr. Lee, however profound or however skilfully applied, would never do away with the necessity for a practical knowledge of gardening, and the use of the spade and the knife. Although the actual demonstration of the sexuality of plants was of much more recent date, its existence had been surmised by Empedocles, B.C. 460.

Tracing the study of gardening science from Theophrastus and Pliny to Bacon, Hales, Bonnet, and DuRoi, when the physiology of plants received careful study, he carried his references up to the Conference on Hybridisation in 1899. He mentioned the enormous improvement in the Begonia as one of the results of hybridisation.

The extraordinary impetus given to the cultivation of Orchids by the rich discoveries of the plant collectors of the earlier half of the nineteenth century, was followed by the no less stimulating effect of the published researches of Darwin on the fertilisation of Orchids. The advent of new species has been to a certain extent discredited by the success of hybridists; and many of their productions have revealed some of the possibilities of hybridisation, which justify the expectation of even greater and more interesting results. Nor has hybridisation benefited the so-called flowering plants only, but it has extended to the improvement of culinary vegetables, agricultural plants, and fruits.

It has been roughly calculated that the improvements effected on the different varieties of Wheat grown in America has made an increase of about 4 bushels per acre in the yield, which, at a moderate valuation, represents an increased annual value in the Wheat-crop of £28,000,000 sterling! The value of hybridisation as a botanical science is undoubted, and not easily estimated, while the fascination of the work is engrossing and elevating in a high degree.

Mr. Andrew Hlope (hon. secretary) occupied the chair. At the close a hearty vote of thanks was awarded to the lecturer. Mr. Hlope gave a prescription he had received from the Board of Agriculture for the removal of moss, lichens, decaying bark, and fruit-destroying insects from orchard-trees, saying at the same time that the recipe was both cheap and effectual, viz., 1 lb. caustic soda and 1 lb. pearl-ash, separately dissolved, adding $\frac{1}{2}$ lb. agricultural treacle, or the same quantity of soft-soap, to 10 gallons of water, the wash to be applied in the month of February, if possible.

CHESTER PAXTON.

At the Grosvenor Museum on Saturday Mr. B. Moore, The Dale, read a carefully prepared paper, entitled "The Successful Culture of Calanthes." Mr. Moore has been a successful grower of these beautiful orchidaceous plants for a number of years, and he dealt with his subject in a practical manner. He placed a high estimate upon them for decorative purposes, and stated that with care the flowers would last from two to three weeks after being cut. He gave minute details as to potting soils and suitable manures, and other matters connected with the cultivation of the plants.

NATIONAL AURICULA & PRIMULA (Southern Section).

THE twenty-fifth annual report of this Society in its statement of accounts shows a balance in hand, after paying its liabilities in the year 1901, of £21 13s. 6d., a sum about £2 in excess of that of 1900. Eleven new members joined the Society during the year, but there have been several losses from death and other causes; and to ensure the prosperity of the Society, it now remains for the members to bring in recruits to fill these and other vacancies, which must inevitably occur. This annual show will be held in the Drill Hall of the London Scottish Volunteers, Buckingham Gate, Westminster, on Tuesday, April 22.

Mr. J. Douglas, of Great Bookham, Surrey, again generously offers to supply members with a packet of Alpine Auricula seed, saved from the best varieties, to such as will undertake to sow the seed and cultivate the plants, and on condition that they apply to Mr. T. E. Henwood, 16, Hamilton Road, Reading, before June 1.

MIDLAND CARNATION & PICOTEE.

THE Report for 1901 of this Society shows continued prosperity, although the committee have to regret a considerable diminution of the balance in hand, as compared with 1900. The eleventh annual show held at Edgbaston on August 1 was considered to be one of the best hitherto held, in spite of the Flakes, Bizarres, and white ground Picotees not being up to the exhibition standard. The attendance of the public and of members was larger than in any previous year, and

the entries much more numerous than usual, particularly in selfs, yellow-ground Picotees, Fancies, and "undressed" classes. The rule made two years ago requiring that all seedlings should be named, has had salutary results.

FLORISTS' FLOWERS.

CACTUS DAHLIAS.

No visitor to any of the flower shows in the autumn months can fail to be struck with the beauty of the modern Cactus Dahlias. These have become so numerous of late, and the flowers are so exceedingly attractive and good as cut flowers for indoor decoration, that a note on some that took my fancy at the Crystal Palace show in September of last year may serve a useful purpose at the present time when gardeners are contemplating the purchase of novelties: Loreley, delicate rose, white centre; Mrs. J. Goddard, in colour scarlet, extra fine; Night is a very dark coloured flower; Laverstock Beauty, vermilion; Regulus, a deep crimson; Starfish, of orange-scarlet tint and nice form; Charles Woodbridge, purple-crimson; Cheal's White; The Clown, red, tipped with white; Emperor, plum coloured, with yellow base; Uncle Tom, very dark; Mrs. J. J. Crowe, pale yellow; Bridesmaid, primrose; Britannia, soft pink; Alfred Vasey; Harry Stedwick, with long crimson petals. Of these I intend to add several to my stock of these varieties.

The tubers having been brought from the store in which they have remained since the autumn, should be placed in a gentle heat, covered lightly with soil, and the shoots slipped off, potted singly or otherwise in sandy leaf-mould and peat. Let each variety be carefully labelled, and placed in bottom-heat of 75° till rooted, when they must be removed to a frame having top-heat of 55°, shifting them when necessary into larger pots, and in April inuring them to outside conditions. H. Markham, Wrotham Park.

MARKETS.

COVENT GARDEN, MARCH 6.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| s.d. s.d. | s.d. s.d. |
|---|---------------------------------------|
| Adiantums, doz. 5 0-7 0 | Ferns, small, per 100 ... 4 0-6 0 |
| Arbor-vitæ, var., per dozen ... 8 0-36 0 | Ficus elastica, ea. 1 6-7 6 |
| Aspidistras, doz. 18 0-36 0 | Foliage plants, various, each 1 0-5 0 |
| — specimen, ea. 5 0-10 6 | Lily of Valley, ea. 1 9-3 0 |
| Cannas, per doz. 18 0 — | Lycopodiums, p. dozen ... 3 0-4 0 |
| Cretens, per doz. 18 0-30 0 | Marguerites, per dozen ... 8 0-12 0 |
| Cyclamen, p. doz. 8 0-10 0 | Myrtles, per doz. 8 0-9 0 |
| Dracenas, var., per dozen ... 12 0-30 0 | Palms, var., each 1 0-15 0 |
| — viridis, doz. 9 0-18 0 | — specimen, ea. 21 0-63 0 |
| Erebas, var., doz. 12 0-36 0 | Pelargoniums, scarlet, doz. 8 0-12 0 |
| Euponymus, var., per dozen ... 6 0-18 0 | — Ivyleaf, per dozen ... 8 0-10 0 |
| Evergreens, var., per dozen ... 4 0-18 0 | Spruces, per doz. 6 0-12 0 |
| Ferns, in variety, per dozen ... 4 0-18 0 | |

FRUIT.—AVERAGE WHOLESALE PRICES.

| s.d. s.d. | s.d. s.d. |
|--|---|
| Apples, home-grown, Wellingtons, per bushel ... 8 0-10 0 | Grapes, Gros Colmar, A., p. lb. 3 0-4 0 |
| — Californian, cases 8 0-10 6 | — B., per lb. 1 6-2 0 |
| — Nova Scotian and Canadian, various, p. brl. 21 0-30 0 | — Alicante, lb. 2 0-3 0 |
| — Large Cookers, per bushel ... 6 0-7 0 | — Almeida, per 12 lb. ... 5 0-7 0 |
| Bananas, bunch 5 0-10 0 | Lemons, per case 9 0 — |
| — loose, p. doz. 1 0-1 6 | Oranges, Bitter, case ... 6 0 — |
| Cape Fruit— | — Denia, case ... 11 0-14 6 |
| Grapes, case ... 10 0-16 0 | — Jaffa, per case ... 16 0 — |
| Nectarines, case 10 0-12 0 | — Murcia, blood, case ... 8 6-9 0 |
| Peaches ... 8 0-10 0 | — Tangeline, per case ... 0 8-3 6 |
| Pears ... 4 0-8 0 | Pears, Easter Beurre, in half cases ... 10 0-15 0 |
| Plums ... 4 0-8 0 | Pines, each ... 2 0-3 0 |
| Chestnuts, per bag 12 0-15 0 | Sapocia Nuts, per lb. 1 3 — |
| Cobnuts, Kentish, per lb. 1 0 — | Strawberries, per lb. ... 6 0-10 0 |
| Cranberries, case 12 0 — | Walnuts, per bushel ... 16 0 — |
| — quart ... 8 0 — | |
| Custard Apples, per dozen ... 6 0-9 0 | |

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

| s.d. s.d. | s.d. s.d. |
|---|--|
| Asparagus Fern, bunch ... 1 6-2 6 | Lily of Valley, p. doz. bunches 9 0-18 0 |
| Carnations, per dozen blooms 1 0-2 0 | Maidenhair Fern, doz. bunches 4 0-8 0 |
| Cattleyas, p. doz. 9 0-12 0 | Mignonette, per doz. bunches 4 0-6 0 |
| Eucharis, p. doz. 4 0-6 0 | Odontoglossums, per dozen ... 2 6-6 0 |
| Gardenias, doz. 1 6-2 0 | Roses, Tea, white, per dozen ... 1 0-3 0 |
| Lilium Harrisii, dozen blooms 5 0-8 0 | — Catherine Mermet, per doz. ... 2 0-5 0 |
| Lilium lancifolium, album, p. doz. blooms ... 3 0-4 0 | Smilax, p. bunch 3 0-5 0 |
| Lilium rubrum, per dozen ... 3 0-5 0 | Tuberose, per doz. blooms 0 4-0 8 |
| Lilium longifolium, per dozen ... 5 0-8 0 | |

VEGETABLES.—AVERAGE WHOLESALE PRICES.

| s.d. s.d. | s.d. s.d. |
|--|--|
| Artichokes, Globe, per dozen ... 3 0-3 6 | Minst, new bunch 0 4-0 9 |
| — Jerusalem, p. sieve ... 1 0-1 6 | Mushrooms, house, per lb. ... 0 8 — |
| Asparagus Spruce, bundle ... 0 10-1 3 | Onions, case ... 8 6-9 0 |
| — English ... 5 0 — | — English, per cwt. ... 7 6-8 0 |
| — Giant ... 15 0-22 6 | — in bags ... 6 6-7 0 |
| — Paris Green ... 7 0 — | — picklers, per sieve ... 2 0-3 0 |
| — Spanish ... 1 9 — | Parsley, per doz. bunches ... 2 0 3 0 |
| Beans, dwl., house, per lb. ... 1 6 — | — sieve ... 1 8 — |
| — Madeira, per basket ... 1 0-4 0 | Parsnips, p. cwt. bag ... 2 0-3 0 |
| Beetroots, per bushel ... 1 3-1 9 | Peas in lb. bags ... 0 4 — |
| Brussels Sprouts, sieve ... 2 0-2 6 | — in flats ... 5 0-6 0 |
| Carrots, per doz. bunches ... 3 0-4 0 | Potatoes, per ton ... 50 0-90 0 |
| — washed, bags 3 0-3 6 | — new, per lb. ... 0 2 ½ |
| — unwashed, per bag ... 2 0-2 8 | — Frame, per lb. ... 0 6 — |
| Cauliflowers, per dozen ... 3 0 — | — new Tenerife, per cwt. ... 12 0-14 0 |
| — taily ... 5 0-10 0 | Radishes, p. doz. bunches ... 2 0-2 6 |
| — Italian, bask. 3 9-4 6 | Rhubarb, Yorks, per dozen ... 0 10 ½-1 2 |
| Celeriac, per doz. 2 6 — | Salad, small, punnets, per doz. 1 3 — |
| Celery, per dozen bunches ... 10 0-14 0 | Savoy, taily ... 4 0-6 0 |
| Chicory, per lb. ... 0 3 — | Scotch Kale, bus. 2 0-2 6 |
| Coleworts, bushel 2 0 — | Seakale, per doz. punts ... 10 0-14 0 |
| — bag ... 3 0 — | Shallots, per lb. ... 0 2 — |
| Cress, per dozen punnets ... 1 3 — | Spinach, English, bushel ... 3 6-4 0 |
| Cucumbers, doz. 4 0-8 0 | — French, per crate ... 4 0 — |
| Endive, new French, doz. 1 9-2 0 | Stachys, lb. ... 0 3 — |
| — Batavian, per dozen ... 1 6-2 0 | Tomatoes, Canary, boxes ... 2 0-3 6 |
| Garlic, per lb. ... 0 3 — | Turnip-Tops, per bushel ... 2 0 — |
| Horseradish, foreign, bunch 1 0-1 6 | — bag ... 2 0-4 0 |
| Leeks, 12 bunches 2 0-2 6 | Turnips, per doz. bunches ... 2 0-2 6 |
| Lettuces, Cos, per dozen ... 12 0-15 0 | — bag ... 2 0-2 6 |
| — Cabbage, per dozen ... 0 10-1 0 | Watercress, per doz. bunches 0 6-0 8 |

REMARKS.—The Cape Grapes now arriving are Honey-pots, both red and white; Strawberries are easier in price, as also are Onions. Apples remain at about the same price as last week. Sweet Potatoes fetch, per cwt., 16s. to 18s.; old Potatoes about the same as last week. Grape-fruits, per doz., 4s. Bitter (Seville) Oranges are coming in, and the present is the proper time for making marmalade and wine.

POTATOS.

Dunbar Main Crop, 90s.; Up-to-Date, 80s. to 85s.; Blacklands, 45s. to 50s.; various, 50s. to 80s. Seed in variety, prices on application. John Bath, 32 & 34, Wellington Street, Covent Garden.

SEEDS.

LONDON: March 5.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that there were but few buyers on to-day's seed market, with only a small business passing. The chief requirement just now to bring on the consumptive demand is a spell of favourable weather. Meanwhile, Clover-seeds all round show no important change in value, but no description can be written dearer. Ryegrasses continue dull. There is this week no alteration in Mustard or Rapeseed, but Linsced is firm. Canary-seed, with its moderate stocks quietly diminishing, is featureless; other kinds of Birdseeds call for no comment. For Spring Tares there has been a better request. Scarlet and White Runner Beans are now obtainable on unusually moderate terms. Blue Peas and Haricot Beans have moved off slowly.

FRUITS AND VEGETABLES.

GLASGOW, March 5.—The following are the averages of the prices during the past week:—Apples, Newtown Californian, 9s. 6d. to 10s. 6d. per case; Oregon 12s. to 13s. 6d.; Nova Scotia Baldwin, 22s. to 24s. per brl.; Maine, 20s. to 24s. 6d.; Canadian, 23s. to 26s. 6d.; Oranges, Valencia, ordinary, 420s. 7s. 6d. to 8s. per box; do., large 420s. 9s. 6d. to 10s. 6d.; extra large do., 10s. 6d. to 12s. 6d.; do., large 714s. 9s. 6d. to 9s. 6d.; Jaffa, 12s. to 13s. 6d.; Grapes, home, 1s. 6d. to 2s. 6d.

per lb.; Onions, Valencia, 5s. 9s. 6d. to 10s. per box; do., Globes, 8s. 6d. to 10s. 6d.; do., Dutch, 6s. 6d. to 10s. 6d.; Mushrooms, 1s. to 1s. 6d. per lb.

LIVERPOOL: March 5.—Wholesale Vegetable Market.—Potatoes, per cwt.: Up-to-Date, 2s. 2d. to 2s. 8d.; Main Crop, 3s. to 4s.; Lynn Grays, 2s. to 2s. 6d.; Bruce, 2s. 2d. to 2s. 8d.; Turnips, Swedes, 2s. to 2s. 3d. per cwt.; Carrots, 3s. 6d. to 4s. 6d. St. Johns: Potatoes, 1s. to 1s. 2d. per peck; new do., 6d. per lb.; Grapes, English, 3s. per lb.; do., foreign, 4d. to 6d. 6d.; Pines, English, 5s. each; Apples, 2d. to 4d. per lb.; Tomatoes, 4d. to 6d. ditto; Asparagus, 1s. per bundle; Cucumbers, 1s. each; Mushrooms, 1s. 6d. per lb. Birkenhead: Potatoes, 10d. to 1s. per peck; Grapes, English, 2s. to 4s. per lb.; do., foreign, 6d. to 8d. 6d.; Mushrooms, 1s. to 1s. 6d. per lb.; Filberts, 1s. 6d.

CORN.

AVERAGE PRICES of British Corn (per Imperial qr.), for the week ending March 1, 1902, and for the corresponding period of 1901, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

| Description. | 1901. | 1902. | Difference. |
|---------------|-------|-------|-------------|
| | s. d. | s. d. | s. d. |
| Wheat | 25 11 | 27 1 | + 1 2 |
| Barley | 25 0 | 26 7 | + 1 7 |
| Oats | 17 9 | 20 5 | + 2 8 |



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period February 23 to March 1, 1902. Height above sea-level 24 feet.

| 1902. FEBRUARY 23 TO MARCH 1. | DIRECTION OF WIND. | TEMPERATURE OF THE AIR. | | | | TEMPERATURE OF THE SOIL AT 9 A.M. | | | |
|--|--------------------|-------------------------|-----------|-------------|---------|-----------------------------------|------|---|------|
| | | At 9 A.M. | | DAY. NIGHT. | | RAINFALL. | | At 1-foot deep. At 2-foot deep. At 4-foot deep. | |
| | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. | Ins. | deg. | deg. | deg. |
| SUN. 23 | S.S.E. | 45.4 | 44.7 | 50.6 | 39.0 | 0.03 | 34.4 | 37.3 | 41.3 |
| MON. 24 | E.S.E. | 45.9 | 44.6 | 47.1 | 45.0 | 0.29 | 37.9 | 37.8 | 41.3 |
| TUES. 25 | E.S.E. | 44.4 | 43.9 | 47.7 | 44.3 | 0.05 | 39.7 | 38.9 | 41.3 |
| WED. 26 | E.S.E. | 39.9 | 38.1 | 47.1 | 37.8 | 0.15 | 39.8 | 40.0 | 41.3 |
| THU. 27 | S.S.W. | 46.7 | 44.4 | 50.9 | 40.0 | 0.02 | 40.6 | 40.3 | 41.5 |
| FRI. 28 | S.S.W. | 47.9 | 45.9 | 53.6 | 43.6 | 0.03 | 41.9 | 41.0 | 41.8 |
| SAT. 1 | N.E. | 41.4 | 40.7 | 52.4 | 35.3 | ... | 41.7 | 41.8 | 42.0 |
| MEANS | ... | 44.5 | 43.2 | 49.9 | 40.7 | 0.57 | 39.4 | 39.6 | 41.5 |

Remarks.—A week of foggy mornings and dull days, with frequent showers.

GENERAL OBSERVATIONS.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending March 1, is furnished from the Meteorological Office:—
"The weather during this period was generally mild with very frequent, but not as a rule, heavy rain. Some fine, clear intervals were, however, experienced at times, especially in the more eastern and southern districts."

"The temperature was above the mean throughout the kingdom; in the east and north-east of Great Britain the excess was only 1° or 2°, but in most other districts it was as much as 4°, and in England, S.W. and Ireland, S., 5°. The highest of the maxima occurred on rather irregular dates, and ranged from 59° in England, N.W. (at Llandudno on Tuesday), and 57° in England, S. and the Channel Islands, to 54° in the extreme northern and north-eastern districts, and to 51° in Scotland, W. The lowest of the minima, which were mostly recorded either on Wednesday or Thursday, ranged from 27° in the Midland Counties, and 28° in Scotland, E. and England, N.E. and E., to 37° in

England, S. and S.W., 39° in the Channel Islands, and to 40° in Ireland, S.

"The rainfall was more than the mean in almost all parts of the kingdom; the excess was very considerable in most districts, but only slight in the extreme north-east and east. In Scotland, N. and the Channel Islands the fall was less than the mean, the deficit in the former region being large.

"The bright sunshine was deficient in all districts except the Channel Islands. The percentage of the possible duration ranged from 35 in the district just named, and from 25 in England, E., to 21 in England, S., 19 in England, N.E., 8 in Scotland, N. and E., and 3 in Scotland, W.

THE WEATHER IN WEST HERTS.

A WEEK of very warm and showery weather. On five days the shade temperature rose in the middle of the day above 50°, and on no night did the exposed thermometer show more than 4° of frost. Both at 1 and 2 feet deep the ground is at the present time about 1° warmer than is seasonable. Some rain fell on nearly every day, but to the total depth of only about three-quarters of an inch. This was rather a dull week, as the sun shone on an average for only about two hours a day. The winds were, as a rule, very light, and there was more than the usual amount of moisture in the air. The first fertile flower appeared on a selected bush of the wild Hazel on the 1st, which is nearly a fortnight later than its average date in the previous eleven years, but two days earlier than last year.

FEBRUARY.

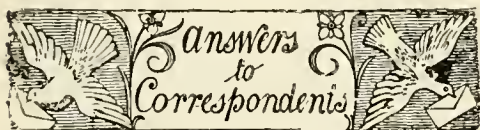
This was a very cold and exceptionally calm February. On only four nights did the exposed thermometer fail to register a temperature below the freezing point, and on the coldest night showed 25° of frost. Throughout the first three weeks both the days and nights were all cold, but during the remaining week the weather remained as persistently warm. Rain or snow fell on thirteen days, to the total depth of nearly 1½ inch, which is about half an inch below the average for the month. Of the total quantity, however, less than a quarter of an inch was deposited during the first three weeks. About 5 gallons of rainwater came through the percolation-gauge covered with short grass during the last week of February, and about 6 gallons through the bare soil gauge, but previous to this there was no measurable percolation through either gauge. The sun shone on an average for about one and three-quarter hours a day, which is about half an hour a day short of the mean record for the month. The atmosphere remained remarkably calm, indeed calmer than in any previous February of which I have here any record. It was also more humid than in any February for sixteen years.

THE WINTER.

Taken as a whole, this was rather a mild winter, and the rainfall was about half an inch in defect of the average for the season. December proved excessively wet, but after this there was very little rain until the last week in February. In fact, during the seven weeks ending February 21, only about three quarters of an inch of rain fell, which is only about one-fifth of the average quantity for that period. The record of clear sunshine fell short of the mean for the quarter by about five minutes a day.

THE RAINFALL FOR THE PAST FIVE MONTHS.

Since the winter half of the drainage year began in October, the total rainfall has come short of the average for those five months by 3½ inches, which is equivalent to a loss on each square yard of surface in this district of 15 gallons of rain-water. *E. M., Berkhamsted, March 4, 1902.*



A GRAFTING-WAX: *E. T.* A wax that may be used either warm or cold is made by melting 1½ lb. of clear resin and ¼ lb. of white pitch. At the same time melt ¼ lb. of tallow. Pour the melted tallow into the first mixture, and stir vigorously; then before the stuff cools add slowly ¼ lb. of venetian red. Another recipe for a cold wax is: Melt six parts white resin with one part beeswax. Remove from, and partially cool by stirring, then add gradually with continual stirring enough methylated spirit to make the mixture

when cool of the consistency of porridge. It may be applied with a bit of wood or the finger.

ANALYSIS OF SOIL: *J. L.* If you, or your employer, is a Fellow of the R.H.S., you can get your soil analysed at a small expenditure. Apply to the Secretary, 117, Victoria Street, Westminster.

CALLA OR RICHARDIA BLOOM: *J. G. W.* A twin-flowered specimen, by no means uncommon.

CORRECTION: *Calanthes.* In our Orchid Calendar for Feb. 22 last, it was erroneously stated that the pseudo-bulbs of *Calanthes* should not be exposed to sunshine in order to mature them, when the contrary is the case.

CUCUMBER LEAVES: *C. B.* There is nothing in the leaves themselves to account for the disfigurement. They are rather thin, such as we should expect to find upon forced plants in weather that prevented the use of the ventilators. Keep your plants as sturdy as possible, and be very careful not to use excessive doses of the manures you name. There is no disease manifest in the leaves.

GRUB IN PEAS: *F. W. C.* The larvæ of the Pea-weevil, *Bruchus granarius*. Their presence does not always prevent germination, but the resulting plants are sure to be deficient in vigour. All respectable seed merchants have the seed-peas sorted by women and girls, and weevil-eaten seeds picked out before the order season arrives.

HIPPEASTRUM (AMARYLLIS): *Thomas Gibbs.* An exceedingly fine flower, of rich flame colour, almost scarlet. In size it is quite remarkable, and is not unlike some of the varieties that have been exhibited by Capt. Holford; but whether a name has been given to an exactly similar one we are unable to say.

MOSS-LITTER AS A MANURE FOR TOMATOS: *Whitney.* If the material is allowed to heat and be turned and thrown into heaps about once a week till it is freed of much of its ammonia, and decay has set in generally, it is useful as a manure, especially with heavy loam.

NAMES OF FRUITS: *T. W. L.* Apparently poor fruits of *Ne Plus Meuris*.

NAMES OF PLANTS: *G. A.* We cannot undertake to name varieties of *Camellia*. Send the flowers to some nurseryman who grows them largely.—*J. G.* *Eupatorium Weinmannianum*.—*J. M. B.* *Cymbidium* × *eburneolum* of excellent quality. We remark on it in a paragraph, p. 154.—*C. C.* *Pittosporum undulatum*.—*Froggatt.* *Odontoglossum* × *Andersonianum*, a small variety of it.—*Dr. C. Ludlow.* *Odontoglossum triumphans*, a very fine variety of it.—*T. Denny.* *Cypripedium Boxalli*; we shall have something to say about the flower *C. exul* in a future issue.

PEAR DISEASE: *Trevince.* The shoots sent are affected with a fungus, *Nectria ditissima*, causing the so-called carker. Dress affected parts with coal-tar, or cut out down to living bark, and destroy by burning all infected material. It is also advisable to remove down to living healthy tissue. The infection is brought about by the germination of spores on wounded parts, pruned shoots and spurs, bruised and abraded bark, &c.

PRIMROSE SEEDLINGS: *C. W. D.* The seedling *Primulas* are attacked by the fungus called *Ovularia primulina*. The disease is mostly confined to the seedling stage. If the soil is thoroughly disinfected by heat, and the seedlings sprayed with dilute potassium permanganate solution, the disease can be held in check. *G. Massee.*

STOPPING CHRYSANTHEMUMS SO AS TO HAVE THE PLANTS IN BLOOM NOV. 20: *Careful Reader.* To know when to stop any of the varieties, and also the time when to take the buds, consult a specialist's catalogue.

THEORETIC INSTRUCTION IN HORTICULTURE: *Anxious.* Certainly we would advise you to participate in a course of theoretical instruction, as you will then gain an insight of the "reason why" of numerous practices of the gardener's art, with the result that you will be better equipped as a gardener, and better enabled to direct the labours of others. Without it you cannot expect to surpass your predecessors. With it you may make an advance on what they could do.

VINE: *Grapes, Tewkesbury.* There is no Phylloxera on the specimen sent, but the cause of the death of the Vine is not discoverable, unless it be the exhaustion of the soil in the pot (?) of all plant food.

WIRE TRELLISING: *R. T. H.* If it be a wall that is to be furnished with wire to which fruit-trees will be fastened, let common iron wire be employed, securing it with cast-iron studs, which can be bought at about the same price as cast-iron wall-nails. It is prudent to have the terminal studs about 2 inches long, and the intermediate ones 1½ inch. These and the wire, which may be about the size of ordinary packing-twine, i.e., one-tenth of an inch in diameter, will last many years. The wires should be fixed vertically, there being then no sagging owing to the weight of the branches; and being of short lengths there is no movement as in horizontal wires to cause rubbing of the kind. The wire should be placed at 7 inches apart, ¼ inch distant from the face of the wall, and be stretched very taut. All ties should pass once completely round a wire, and in the case of the branches of more than one year old, it should be twisted twice afterwards, so as to form a pad between branch and wire, and avoid contact of the two. A tied tree has a neater appearance than one that is fastened with nails and shreds; and an expert man will tie a tree almost as quickly as a good nailer would nail it.

COMMUNICATIONS RECEIVED.—*E. S. S.*—*L. Van den B.* Trilemont.—*W. H. S.*, please send for perusal.—*W. E.*—*B. G. S.*, next week.—*S. W. F.*—*J. W.*—*Innes & Co.*—*National Rose Society.*—*M. Jehlen*, Paris.—*J. W.*—*S. W. F.*—*W. B. H.*—*W. G. J. & Co.*—*W. E.*, Leipzig.—*H. B. J.*, many thanks; we will examine, and report.—*Lord A.*—*J. L.*—*A. H.*, Orton, please send a few later on; what you sent was exactly what was required; many thanks.—*H. J. V.*—*W. W.*—*D. Brough.*—*J. M.*, Bath.—*J. P.*, Ashwick (with thanks).—*F. R. H. S.*—*J. F.*—*J. S.*—*J. C.*—*E. C. L.*—*W. J.*, Simpson.—*A. R. P.*, Nice.—*Nonex.*—*G. B.*—*G. M. W.*—*F. W. O.*—*H. Z.*, next week.—*A. G. C. D.*, photographs, with thanks.—*T. D.*—*O. B.*, Belgrade.—*M. C. C.*—*B. G. S.*—*F. S.*—*A. B. T. H. S.*—*A. S.*—*J. W. N.*—*S. A.*—*W. M.*—*E. C.*—*T. T.*—*J. W.*—*Diosma.*—*W. S.*—*E. J.*—*B. H.*—*J. W. T.*—*H. P.*—*W. H. S.*—*A. C.*

CATALOGUES RECEIVED.

FARM SEEDS.

COOPER, TABER & Co., Ltd., 90 & 92, Southwark Street, London, S.E. (Wholesale List).
KENT & BRYDON, Darlington.
W. CLIBRAN & SON, 10 & 12, Market Street, Manchester, and Oldfield Nurseries, Altrincham.

PLANTS.

JOHN FORBES, Hawick, Scotland—Florists' Flowers and Border Plants.
S. F. RICHMOND, Ossett, Yorks—Chrysanthemums.

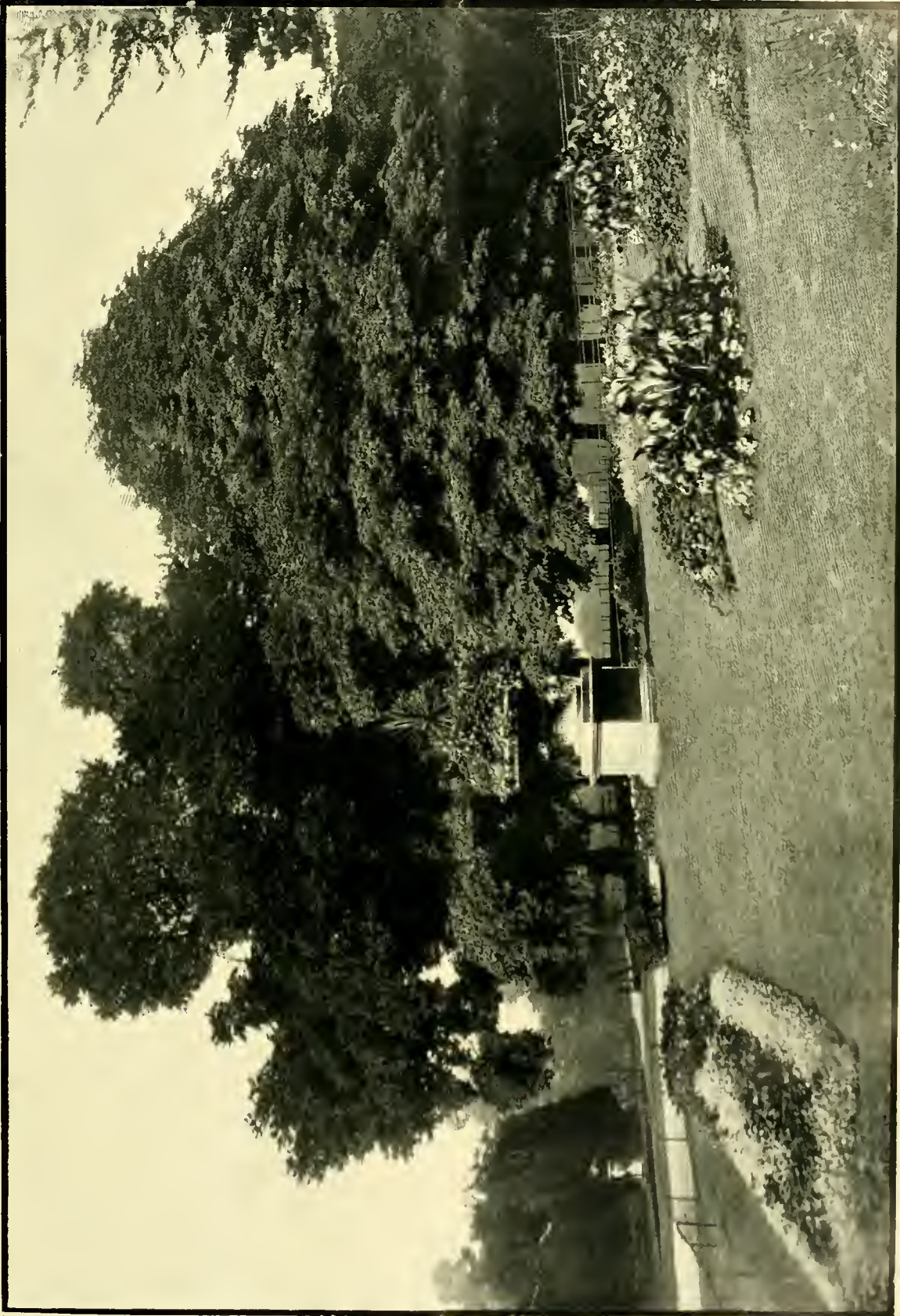
GARDENING APPOINTMENTS.

MR. L. CARSLY, for the last three years Foreman in the Gardens, Ickworth, Bury St. Edmunds, as Head Gardener to **PETER HOARE, Esq.**, Luscombe Castle, Dawlish, Devonshire.
MR. F. OLVER, who has been Foreman in the Gardens, Hackwood Park, Basingstoke, for nearly four years, as Head Gardener to **Baron SCHRODER**, The Rookery, Nantwich.
MR. WM. JUDD, for the past four years Head Gardener to **J. C. DEVERELL, Esq.**, Dorking, as Head Gardener to **Mrs. HARRIS**, Stevenston Manor, Whitchurch, Hants.

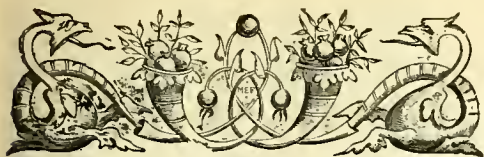
Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

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.



VIEW IN THE VICTORIA PARK, BATH.



THE Gardeners' Chronicle

No. 794.—SATURDAY, MARCH 15, 1902.

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DAFFODILS.

OF all vernal flowers, these are the most fascinating. They have also the longest reign, extending, as it does, from the death of the Crocus till the re-appearance of the fragrant Narcissus ornatus, an early form of *N. poeticus*. We do not "weep" now-a-days, like the olden English poet, to see them "pass away so soon." Perhaps in his day he had only the early and familiar Narcissus pseudo-Narcissus and the great *Telamonius plenus*; whereas we, who live in the golden days of hybridisation, have Daffodils in glorious and continuous bloom from the confines of March till the middle of May. Most of them also are comparatively easy of culture; in many instances the noblest varieties, such as Emperor and Empress, will increase year by year, if only they are assigned a suitable position, in deep, moist loam, with adequate drainage; while others of a hardier character, and even more accommodating nature, will, without any difficulty, become naturalised on lawns. The earliest variety here, growing in grass under the venerable, over-arching trees, with charming effect during the month of March, is the "Scottish Garland Lily" (*Narcissus scoticus*), where it has been, I

believe, for the last fifty years. It is a much more perfect flower than the English Lent Lily, to which, under its botanical name, allusion has already been incidentally made, and it is exquisitely serrated. I would not describe its perianth as white (unless the variety we possess is a hybrid), rather as being very pale primrose. My supreme favourites for garden-cultivation are the beautiful white-winged, or bicolor forms, all of which are exquisite, while several, in their size and substance and splendour, are nobly impressive. Among the grandest of these are the famous Weardale Perfection, whose price, unless to the affluent cultivator, is quite prohibitive, but which is unquestionably one of the most striking Daffodils in existence; Victoria (which I first saw at the Long Ditton nurseries of the Messrs. Barr), with creamy-white perianth and golden trumpet, gracefully fringed; J. B. M. Camm, remarkable for its beauty of form; the venerable Horsfield, raised by a flower-loving Lancashire weaver; Empress and Grandis, rivalling in their endowments the boasted beauty of Weardale, though perhaps not quite so large. Exceedingly decorative to our garden borders are also the pure yellows, of which some of the finest are the almost invincible Emperor, which I never weary of contemplating, so lustrous is its aspect during the period of bloom; Ard Righ, an early-flowering Irish creation, requiring for effective culture a half-shady situation; Glory of Leiden, a grand variety; Countess of Annesley, Golden Spur, a Daffodil of rare beauty, worthy of its name; and the highly distinctive Queen of Spain. The variety last mentioned, discovered in Spain by Mr. Peter Barr, I have not found very reliable or enduring; but I greatly fear that it did not find in my garden congenial soil.

Extremely interesting also are the "chalice-cupped" Daffodils (*Narcissus incomparabilis*), especially such fine forms as C. J. Backhouse, of a luminous yellow hue, with orange-scarlet cup, which was awarded a First-class Certificate by the Royal Horticultural Society; the greatly-admired Gloria Mundi, which received a similar distinction; Princess Mary, Queen Sophia, and the richly-coloured, highly-artistic Frank Miles. A very effective hybrid is Barri conspicuus, which should be found in every garden. Most charming in their influence are the "Eucharis-flowered," silvery-white Daffodils, of which some of the choicest varieties are Duchess of Westminster, Mrs. Langtry, Beatrice, Grand Duchess, Duchess of Brabant, and Princess of Wales.

The fair and fragrant successors of these are *Narcissus ornatus* and *N. poeticus*, which keep our gardens beautiful and odorous till the advent of the Rose. *David R. Williamson*.

NEW OR NOTEWORTHY PLANTS.

HELICHRYSUM VOLKENSH.*

(See fig. 50, p. 170.)

THIS is another of the African species which Mr. Gumbleton has succeeded in flowering. To him we are indebted for the specimen now figured by Mr. Worthington Smith, and which

* *Helichrysum Volkensii*, O. Hoffmann, in *Engl. Pflanzenzenc. Ost.-Afrik.* (1895), p. 410.

has been identified for us by Dr. Rendle. Like its congeners that have been recently figured, it is a native of the Kilima-njaro mountain in German East Tropical Africa, where it grows in the "highest zone of vegetation." It is of shrubby habit, the stems and branches densely covered with white, shaggy hairs. The upper leaves are about 4 cent. long, 3 to 4 mill. wide; sessile, ascending, linear, mucronate, with recurved edges, and more or less studded (especially on the under surface near the midrib) with small-stalked, capitate glands. The flower-heads in the specimen before us are about 2 cent. long, 25 mill. across, in groups of three. Bracts of the involucre membranous, lanceolate; outermost shorter, bright rose-coloured; innermost longer, whitish.

The plant before us differs from the type, as pointed out to us by Dr. Rendle, in having fewer heads of flowers on shorter peduncles; but this may be due to cultivation.

PASSIFLORA AMBIGUA.

Our illustration in fig. 51, p. 171, is of a new Passion flower, published in the current number of the *Botanical Magazine*, from which journal we extract the following particulars:—"The description of *Passiflora ambigua* cited under tab. 7822 is taken almost wholly from one kindly lent me by Mr. Hemsley. It was drawn up by him from a specimen which was raised from seed received in 1896 from Mr. E. G. Sturridge, nurseryman, of Blewfields, in Nicaragua, which flowered in the Palm-house of the Royal Gardens, Kew, in May, 1901. Mr. Hemsley regards its affinity [to be] so close with *P. laurifolia*, Linn. (Jacquin, *Hortus Vindobonensis* ii., t. 162), and *P. maliformis*, Linn. (*Bot. Register*, t. 94), as to suggest the possibility of its being of hybrid origin. Premising that *P. ambigua* is a very much larger plant, with flowers more than double the size, and with a differently coloured perianth, it further differs from *P. laurifolia* in the petiole, being biglandular in the middle, not at the apex, in the bracteoles being eglandular, in the leaves not being cordate at the base, and in the long filaments of the corona having obtuse not subulate tips. From *P. maliformis* it differs in the same characters of the leaf-base, size of flower, and long filaments of the corona, and also in the stipules being linear, not ovate with subulate tips." *J. D. H.*, in *Botanical Magazine*.

THE FORCING OF RETARDED PLANTS.

(Concluded from p. 155.)

LILIUM LONGIFLORUM.—This plant has been the least satisfactory with me, and I believe this is a somewhat general experience. The bulbs must be potted as soon as received, the potting being similar to that afforded to *Spiræas*; and they should receive but a very moderate amount of water, in fact, I never afford any before the soil is filled with roots. It is better to use moderately moist soil for potting than to apply water, and plunge the pots in Cocoanut-fibre refuse or finely-sifted coal-ashes in a cold frame. The pots should be frequently sprinkled or syringed. When growth has begun, carefully shade the plants, and place them near the glass in a house where a temperature of 50° can be maintained; when flower-buds show, a warmth of 60° should be afforded, but not higher than this. The bulbs may be potted at any time during the summer and autumn; those potted before September require from fourteen to sixteen weeks to bring them into flower, and proportionately longer as the season advances. Green-fly must be kept in check, or deformed flowers

will be the result. *L. lancifolium* and the variety *album* require the same kind of treatment, but a period of three or four weeks longer is required to bring them into flower.

AZALEA MOLLIS.

These plants should be potted as soon as received, put in a cold frame or the greenhouse, lightly shaded in bright weather, and syringed frequently till the flower-buds begin to open, but no longer. *Azalea mollis* requires careful treatment, or the flowers will be very short-lived. They must not be kept in a dry atmosphere, or one that is very moist, and soil should be kept moist.

In conclusion, I may state that these plants are not so lasting in apartments as naturally-grown plants, more especially *Azalea mollis*. But a great deal depends upon the treatment afforded, for should any of the details here set forth be neglected they will flag, and there is an end of them for decorative purposes. I have not by any means exhausted the list of retarded plants now on the market, such as *Deutzias*, double and single-flowered *Cherries*, *Pyrus*, and other useful subjects. *T. Arnold*.

ORCHID NOTES AND GLEANINGS.

CATTLEYA TRIANÆI WITH THREE LIPS.

A SINGULAR and rather pretty case of *peloria* is shown in one of the two flowers of an inflorescence of *Cattleya labiata Trianæi*, kindly sent by Mr. Brown, gr. to Geo. C. Raphael, Esq., Castle Hill, Englefield Green. One of the flowers is of the normal shape, a good and well coloured variety; the other in the arrangement of its parts seems to imitate an *Iris*, the nearly straight column having three labellums arranged round it like the standards of an *Iris germanica*. In each the normal form of the lip is tolerably well retained, though they are scarcely so large as that of the perfect flower. The colour is the same, viz., pale lilac at the base, orange in the centre, and bright purple in front. The sepals and petals are white, tinted with rose; the petals slightly stalked at the base, and both sepals and petals arranged round the showy centre of bright coloured labellum.

ODONTOGLOSSUM × ADRIANÆ "LIEUT. T. G. GIBSON."

The pretty set of natural hybrids between *Odontoglossum crispum* and *O. Hunnewellianum* appear tolerably freely among importations from a certain locality, and there is great variation both in the size and the markings of the flowers of the different forms. First there are a good number with small flowers of a crumpled shape, which are not much valued; then there are the dark varieties with yellowish ground colour, spotted with chestnut-brown, and more nearly approaching *O. Hunnewellianum*; and lastly the forms approaching *O. crispum*, which are much prized and valued according to the nearness to which they approach the typical *O. crispum* in the size and arrangement of their flowers. The best of that finest type which we have seen is *O. × Adrianæ* "Lieut. T. G. Gibson," kindly sent us by Mr. James Riddell, gr. to T. G. Gibson, Esq., Lesbury House, Lesbury, Northumberland, who names it after his son, Lieut. Gibson, who has for the last three years been serving his country in South Africa. The flower, which is nearly 3 inches across, is almost as broad in the segments as *O. crispum*; in colour white, with a purple tint on the backs of the sepals, which shows through to the surface. The sepals have each a group of

small red-brown blotches near the base, and one large irregular one near the tops, which are margined with primrose-yellow. The fringed petals have the middle portions blotched with red-brown. The lip is white, with pale yellow crest, above which are many small purple lines, and in front several red-brown blotches, the margin being toothed. It is said to have two spikes of ten and twelve flowers.

THE FERNERY.

THE TREATMENT OF HARDY FERNS.

FOR those who possess collections of hardy native Ferns, or who contemplate giving some space to choice varieties in shady

or division, taking care not to over-pot, a pot an inch wider being usually ample for a shift except for very robust varieties. The drainage should be carefully seen to, and if the old ball shows any signs of sourness, it is best to shake the Fern quite out, remove the dead roots, and repot in fresh soil. The best general compost is a mixture of equal parts of friable yellow loam and leaf-mould, or brown fibrous-peat, adding a dash of coarse silver or road sand to assist in keeping it open. Ferns which have developed a number of side-shoots or offsets should have these removed—a single crown always makes a better specimen, and shows the varietal characters to more advantage than when a crowd is permitted to accumulate. These offsets can be usually pulled away or split off with a blunt trowel or piece



FIG. 50.—*HELICHRYSUM VOLKENSII*: BRACTS BRIGHT ROSE-COLOURED.
(SEE P. 169.)

situations in the open or in cold conservatories with a northern aspect, March is decidedly the best month in which to over-haul or instal the plants. The Ferns are only just commencing to awake from their long winter sleep, and are thus not only in a vigorous condition, and best fitted to withstand the shock of removal or transmission, but are also the least liable to suffer permanent damage since the new fronds are all to come, and the old ones if damaged imply no great loss by removal. It is, however, advisable to retain these old fronds of ever-green species until the plants are re-established, and the new ones well advanced, cutting off only the obviously dead portions, or such as may show evidence of insect infestation in the previous season, as such evidence is always accompanied by the presence of eggs, which mean a later brood if not destroyed. Pots should now be cleaned, and their tenants attended to as regards repotting

of wood, and as they are furnished with their own particular set of roots, they only require potting-up or transplanting to form independent specimens. These remarks refer to such Ferns as Lady Ferns, Male Ferns, and other Lastreas, and Shield Ferns, all of which form central crowns, round which a complete set of fronds form a circle like a shuttlecock. The rambling species with travelling root-stocks, like the several Polypodies, the common Polypody, and Oak, Beech, and Limestone Polypodies are best left alone to form clumps, as their fronds spring up singly, and arrange themselves in such a way that they look best when well established. Under glass this tribe is best grown in shallow pans, room being thus given for lateral extension. Such Ferns can be propagated easily by cutting the rhizomes or root-stocks here and there, and pulling them asunder, when each piece with a growing tip roots, and a frond or two will make a plant. The pans should stand on,

not in, smaller saucers, which will catch and retain surplus water, and should not be allowed to become empty. On the other hand, it is not wise to stand pots in saucers so that they are constantly saturated; none but remarkably vigorous plants in full growth will stand such saturation long, as the soil is

sourness results, and growth, as we have found, is greatly stimulated, while the trouble of watering is reduced. Fern-beds in the open may now be cleared of absolutely dead fronds, but it is well to mulch, not bury, the crowns lightly with old leaves, to protect the incipient growth from drying winds, to which

to their houses on the north or east, where the satisfactory growth of flowering plants is impracticable, we cannot too strongly suggest the installation of a few dozen fine varieties of our native hardy Ferns, such as any trade list will indicate. With a little care, a collection of such plants will prove intensely inte-



FIG. 51.—PASSIFLORA AMBIGUA. (SEE P. 169.)

apt to become sour, and air is as necessary to roots as water for healthy growth. We have tried, and cannot too strongly recommend, for Ferns Sankey's well-pots, which have a hole in the side a little way from the bottom, and an earthenware diaphragm fitted loosely inside the pot just above the orifice. The bottom of the pot retains the surplus water, but as there is a space between this and the diaphragm, no

they are subject at this time of year. In planting such as is necessitated by the removal of divisions from crowded plants, care should be taken to give ample room for subsequent growth; the fault of most collections is overcrowding, in consequence of which a large proportion of the natural beauty is sacrificed.

To those who have conservatories attached

resting, as well as extremely decorative; the shade which is so adverse to the flowering plants, is the congenial element for the Ferns, if not overdone. The plants are as hardy as grass, and their diversity of form really wonderful, while their variation in size from the giant to the dwarf, admits of their use under any space conditions whatever. Chas. T. Drury, F.L.S., V.M.H.

MARKET GARDENING.

THE SOIL MIXTURE FOR CUCUMBERS.

THERE can be no doubt that the best results in the cultivation of Cucumbers are obtained with turf that has been in stack for twelve months, kept free from all weeds whatever and under cover. This will seem easier to try than to do, which I fully admit; such turf, however, providing it is kept dry and free from herbage, will be entirely free from nematodes, worms, and insect pests. What to do the first year, when, of course, no such soil is available, is to mix newly-dug, turfy loam with fresh horse-dung, using enough of the latter to set up strong heat in the body of loam, and after a few days to turn the heap, putting the outside into the middle in re-forming the heap, and then leave it for a week or two, after which space of time, there will be no insect left alive, providing the work has been properly done. Another method when no horse-dung is available, is to employ lime and soot, mixing these with the soil, which, as I have proved by experience, frees the soil from the insects that are the bane of the Cucumber-grower. Another method is to bake the sods made up into a stack on the top of a garden boiler, which however cannot be put in practice where large quantities of soil are required.

If a certain amount of fresh stable-dung be employed in the mixture, and it is at once brought into the Cucumber-house, it will heat slightly for a short time, and much more so if warm water be applied to it. When turf cannot be obtained cheaply, the best of what there is has to be made, and an effort made to make it fit for the purpose. Cucumber soil usually contains a large percentage of manure, and the absence of fibre in the mould is of less importance. The materials should be in a rough, unsifted state that will let water pass freely away, and remain in that condition for a few months. Cucumbers will succeed in it; whatever other ingredient is lacking can be added afterwards.

The market-growers and private gardeners like to see strong growth of leaf and shoot, but it is possible to make the soil too rich for the plants by supplying too much nitrogen in the soil; and seeing that soil in the form of top-dressing has to be employed, artificial fertilisers beyond what the soil mixture contains should not be used at first unless the soil is known to be poor or not quite suitable.

A Cucumber plant in full bearing takes from the ground principally nitrogen, potash, and phosphoric acid, and if these in the proper quantities could be added to the soil, good results would follow; but if we were to add any of these elements in excess of the demands of the plants, bad results would ensue. With too much nitrogen in the soil, the plants form very gross shoots and foliage, and do not crop so freely as short-jointed, moderate-sized shoots and leaves will do, and the fruit will take longer in reaching a usable size. The grower should test his fruit now and again, and the flavour will tell him if any mistake has been made in the treatment of the plants. A well grown Cucumber freshly cut has a pleasant flavour. Too much phosphoric acid in the mixture might be a gain in quality, but the fruit would be classed as seconds (in size) only; yet nothing would sooner stop the production of fruit than lack of phosphoric acid in the soil. Again, if too much potash is used the plants will not last for any length of time, and they will not, as the gardener says,

"break freely." The Cucumber-plants will absorb large quantities of potash to their detriment, and the cultivator must cut back the bine considerably. It should be remembered that some kinds of soil contain an abundance of potash, and manure may also be present.

From all this it will be seen that the making of a suitable Cucumber-compost is not an easy matter. The gardener should find out in what elements his soil is lacking and supply these, which is true of all cultures; but particularly with that of Cucumbers. A capital fertiliser for mixing with Cucumber soil is charred garden refuse, which is rich in potash and mineral salts, and is useful in imparting porosity.

Lime in some form is another necessary addition to a Cucumber-compost if it be not naturally found in the soil, as in the case of loams from chalky districts. If we see young plants when still in the pots producing

from November to January, while the earliest Pseudo-Narcissus does not begin to flower till the end of February. But as I planted the bulbs of the first specimen (Paper-white) in December, it flowered here at the same time as the latter (Daffodil), and so their fecundation was somewhat easily effected.

The following is a description of the hybrid:—

Bulb globose, somewhat smaller than that of the mother, covered with thin, light brown tunics. Leaf linear, light green, not glaucous; 1 to 1½ ft. long about ½ to 1 in. broad. Peduncle shorter than the leaves, about a foot long, or a little longer, veined with two prominent edges; flowering from February to March. Pedicels irregular, shorter than the spathe. Flowers two or three, closely united, fragrant. Perianth milky-white, ascending, tube funnel-shaped, green on the base outwards; segments concave, acute, as long as the tube; corona cup-shaped, truncate, about half as long as the segments, milky-white on their base, sulphur-yellow on the upper part. Stamens and style variable, the latter much shorter than the stamens. Quite sterile, as I believe.



FIG. 52.—NARCISSUS MARGARITE "IOLANDA."

flowers, it might safely be taken that it does contain enough lime. A disadvantage in the use of lime is that it sets part of the ammonia free. If the soil is clayey, lime will form a very good addition [but it should take the form of quicklime, and be distributed throughout the soil whilst it is still in the heap, and before it is put on to the beds. ED.]. A. A. Fabius, Redlands Nursery, Emsworth.

HYBRID NARCISSI.

NARCISSUS × MARGARITE "IOLANDA" (NARCISSUS PAPYRACEUS × PSEUDO-NARCISSUS), (see fig. 52).

AMONGST my new hybrid Narcissus are some very fine and graceful specimens, flowering at the end of February, and to-day (March 4) in their full glory. It was somewhat difficult to hybridise the two different species, as *N. papyraceus*, known in gardens under the old name of "Paper-white Narcissus," flowers very early here

This very fine hybrid Narcissus flowers here in my garden near Saint Elmo luxuriantly, and will become, when more known, a favourite, if it prove hardy in English gardens; but that is doubtful. Ch. Sprenger.

NARCISSUS × SPRENGERI, Baker, in *Gardeners' Chronicle*, VAR. VOMERENSIS (*N. TENORII* × *PSEUDO-NARCISSUS*), (fig. 53.)

Bulb very large, ovoid. Leaves six or more, broad, linear, somewhat glaucous, erect, or ascending, flattish, much longer than the peduncle; this is about 1½ ft. long, striated, cylindrical, with two slightly prominent edges, flowering in February to March. Pedicels irregular, shorter than or as long as the spathe. Perianth spreading, or slightly ascending; tube large, funnel-shaped, longer than the segments. Segments ovate-oblong, acute, ascending, pale sulphur-yellow. Corona fine golden-yellow, as long as the segments, cylindrical, erect, sometimes plicate, undulate, irregular, crenate. Stamens and style very short. Stamens erect, much longer than the style, inserted low down the tube, but deeper than in the pseudo-Narcissus. Flowers mostly three on the stalk, very fine, fragrant.

As it seems, this hybrid is quite sterile. A very splendid garden hybrid, of great interest. It is in flower here now for the first time.

NARCISSUS × SPRENGERI, Baker, VAR. ELMENSIS (N. TENORII × PSEUDO-NARCISSUS VAR.), (fig. 51).

Bulb large, ovoid. Leaves four to six, linear, glaucous, erect, canaliculate. Peduncle shorter than the leaves, with two prominent edges; flowers produced from February to March. Pedicels irregular, shorter than the spathe. Perianth horizontal, not ascending; tube greenish-yellow, funnel-shaped, as long as the segments. Segments splendid lemon-yellow, spatulate, undulate-acute, longer than the corona. Corona golden-yellow, cylindrical, erect, plicate, irregularly inciso-crenate as is the case in the flowers of the male parent. Stamens and style much shorter than the corona. Stamens not erect. Style much longer than the stamens. Flowers very fragrant.

A magnificent new hybrid, flowering for the first time. *Ch. Sprenger, Naples.*

of seeing for themselves what is being done with Primulas and Cyclamens.

With double-flowered varieties of the first, great progress has been made, which renders the plants of this section more easy of cultivation as compared with the older method pursued with the ordinary double-flowering Primula. No fewer than six distinct varieties are now in commerce. Added to this, a double-flowered form of *The Duchess* has been obtained which cannot fail to become popular, possessing as it does the colour of that variety.

Much progress, too, has been made with the *Carnation flaked strain*, in which formerly there was so much more white than purple;

maintains its place for the purity of the white flowers, even the latest exhibit no tinge of any other colour, and it is quite the earliest to flower where early-flowering bright coloured Primulas are valued; the variety *Reading Scarlet* is indispensable. Very fine are the individual blooms of *Reading Blue* and *Cambridge Blue*, which have but few leaves, and the style of growth is very effective and the plants very dwarf, and of remarkable freedom in flowering. *Rosy Queen*, a Fern-leaved variety, is desirable, the habit good. The *Duchess* is still as fine as when introduced in 1900, and is perhaps the showiest Primula, the rosy-carmine centre being so telling a feature.



FIG. 53.—NARCISSUS SPRENGERI VOMERENSIS.
(SEE P. 172.)



FIG. 51.—NARCISSUS SPRENGERI ELMENSIS.

NURSERY NOTES.

PRIMULAS AND CYCLAMENS AT MESSRS. SUTTON AND SONS'.

A CHARMING contrast to the weather outside was afforded by the houses on the occasion of a recent visit. The Primulas were in full flower, but the Cyclamens had been at their best shortly before.

It may be the last time that we shall see this yearly display in their present quarters. As happens in most well-conducted businesses, Messrs. Sutton have found the demands of their customers have outgrown the capabilities of the existing premises, and they contemplate removing the glasshouses to a much more commodious site.

A few lines on what came under notice may have an interest for many readers of these pages, who may not have had the opportunity

but now the flaking is much more decided. The flowers of this strain are especially telling by artificial light. The white-flowering forms with dark leaf-stems are also found more effective on the plants than these varieties having green leaves and stems. The deeply-fringed flowers come in compact trusses on short stems, and are freely produced. The improved double scarlet is now as rich in colour as *Crimson King*, which is one of the brightest of Primulas.

Among single-flowered forms there were many handsome types observed, but the one which struck me most was *Pearl*, a variety that still holds its own. Twenty-one years have elapsed since Sutton introduced this variety, and it is still a very popular variety. The plant is of robust growth, and the flowers come in large trusses, making it a very effective plant.

Royal White is another favourite; *Snowdrift*

The giant single-flowered forms, in a variety of colours, are a distinct gain; the magnificent flower-trusses and flowers, some of the latter 3 inches in diameter, render this type very valuable in decorative work. *Giant Pink*, *Giant Crimson*, and *Royal White* are desirable forms, the first being especially effective.

Star Primulas have a future before them, seeing what a great variety of colour has been obtained, and how useful they are for cutting. No fewer than seven distinct colours are offered. *White Queen* is especially free; *Mont Blanc*, with dark Fern-leaves, is become a very popular variety. A Primula having flowers white, splashed with purple flakes is attractive; pink and salmon colours are pleasing. *Giant White* produces flowers fully 1½ inch in diameter, remarkable for great substance in the segments. *Carmine* is, perhaps, the most desirable in the star sections under artificial

light. Taken as a whole, the star types of *Primulas* are sure to become popular.

Cyclamens.—Although somewhat past their best, it was easy to see that the plants, now carrying a full crop of seed-vessels, had been very floriferous, the Giant forms of almost all the popular colours having been especially showy. Salmon Queen is much improved since last season, as are the Giant forms of Vulcan and Giant White, which last is much improved. Butterfly still maintains its hold on the public by the quality of its flowers, and is distinctly the best of the latifolius type. E. M.

The Week's Work.

THE ORCHID HOUSES.

By W. P. BOUND, Gardener to J. COLMAN, Esq., Gatton Park, Reigate.

Vandas.—Most of these plants may be grown in the same house as the *Aërides*, and afforded the same kind of treatment, but if *V. coerulea* be placed in the stove during the growing season, it should be removed to the *Cattleya*-house during the resting season. At Gatton we leave the plants all the year round in the *Cattleya*-house, and keep them dry during the winter months. Imported plants may now be obtained cheaply. On receiving such plants, thoroughly cleanse them before putting them into the houses. When this has been done, suspend them head downwards in a cool shady house, and slightly spray them once or twice a day till they show signs of root action, then pot them up in the compost advised for *Aërides*. Make the pots two-thirds full of crocks, and in potting let the leaves be brought as near as possible to the level of the compost, cutting away a portion of the old stem, and letting a further portion go down amongst the crocks. Keep the plants well shaded, and syringe frequently between the pots; but until the roots have made a good start, the compost should be kept fairly dry.

Dendrobiums.—Many of the plants, having flowered, are throwing up the young growth, and when this has got about 3 inches in length is the proper time to repot. The wholesale repotting of *Dendrobiums* is not to be recommended, and only those that have reached a certain stage should be repotted. The compost may consist of turfy peat one-half, good leaf-soil one-quarter, and chopped sphagnum-moss one-quarter, all being mixed together. A fair amount of drainage is needed by plants standing on a stage, but the *Dendrobium* requires something more than crocks upon which to feed, and the amount of material must be in the discretion of the cultivator. In cases where water can be dispensed with care and judgment, but little drainage is necessary; on the other hand, if water has to be applied to batches of the plants, then give good drainage in the pots. Suspended plants in pans, &c., do not need much drainage material. Young, healthy plants simply requiring to be shifted should not have the ball of material disturbed beyond removing the compost at the top, unless it has become sour, or is worn out. Older plants, and especially such as have only leading growths near the rim of the pot, should be pulled to pieces and the older parts removed, not more than two pseudo-bulbs behind the leading bulb being retained, and the divided portions placed together. By this means the same number of leads are obtained, but in a smaller pot, and the health of the plant is maintained. *Dendrobiums* should be potted rather firmly, and the base of the leading growth kept a little below the rim of the pot. At the finish, insert three or four clumps of live sphagnum-moss on the surface, which are of assistance in the summer months by reason of the moisture thereby being retained. Repotted plants require scarcely any water at the root for some time, if the house be kept moist. The critical stage is when the roots begin to emerge from the new growth, and no water must be applied then unless the compost is thoroughly dry; and the right time for so doing is early morning.

PLANTS UNDER GLASS.

By J. C. TALLACK, Gardener to E. MILLER MUNDY, Esq., Shipley Hall, Derby.

Hippeastrums.—These, where they have been retarded, will now be pushing up their flower-shafts, and should be brought into a warmer house, and afforded one good application of water or manure-water, and no more till the leaves begin to develop.

Shading will soon be required, *Anthuriums* especially needing much attention in this particular.

Gloriosa superba.—Pot the bulbs in a mixture of peat, leaf-mould, and loam, and a large proportion of sand, and place a handful of it and some decayed cow-manure round each. The soil being moderately moist when used, no water will be required till growth is being made. The best sized pot is one of 10 inches in diameter, which does away with the necessity for repotting.

Winter-flowering Carnations.—Let all young stock be potted off singly when rooted, and be grown on rapidly in rich sandy loam, which is the best sort of soil for them in the early stages. Those plants which were potted earlier may remain for the present rather close to the glass, in a house having a temperature at night of about 60°, and be sprinkled lightly twice or thrice daily. Pot off later cuttings as they become rooted, using for them a mixture of loam, leaf-mould, some decayed manure well pulverised, and a considerable proportion of silver-sand. Let the potting be fairly firm, but do not ram the soil, it being advisable for the present to let the roots run freely in the soil. Earlier struck plants potted singly should be shifted as soon as the roots begin to coil round the sides of the pots, but not affording large shifts.

Souvenir de la Malmaison Carnations.—The best place for these varieties in the winter is a vinery shelf, but as Vines will soon be growing, this position will be no longer suitable for the plants, and they must be removed to another house, where a slight amount of shade may be afforded when the sun becomes powerful. Small and weak layers occupying 60's should be shifted into 5-inch pots, and grown on for flowering next year, it being unlikely that they will produce good blooms this year.

Hard-wooded Plants.—Continue the potting of such plants as have flowered, and are starting into fresh growth, as when caught in this condition they do not suffer from lack of movement at the root, or from having much new growth to support. *Azalea indica* which flowered early should be repotted if the pots are too small, but if they are large they will, if other conditions are right, grow and flower well for several years in the same pots; and if much bigger plants are not desirable, repotting is best left alone. Old plants, or those which may have got into an unhealthy state, may sometimes be restored to health by cutting back into the old wood, removing all weak shoots, placing the plants in a forcing-house, and syringing them frequently.

FRUITS UNDER GLASS.

By JAMES WHYTECK, Gardener to the DUKE OF BUCCLEUCH, Dalkeith.

Earliest Peach-house.—The severe weather and unusual absence of sunshine experienced in February caused the gardener to place his entire dependence upon artificial heat, which together with a lack of fresh air, has resulted in the Vines making slow progress. Patience must be exercised, and till stoning is finished and the second swelling begun, the temperature should not exceed 60° at night, and 70° to 75° by day, affording as much air as is safe, but not when the north or east winds prevail. Just sufficient young shoots should be left for next year's bearing wood, with plenty of shoots towards the centre of the tree; but do not crowd the shoots. Sometimes shoots must be removed which have fruits at their bases, in such cases shorten the shoots to three leaves.

The use of much fire-heat will have favoured the increase of red-spider, and heavy syringings morning and afternoon, with occasionally a weak mixture of soft-soap specially made for horticultural purposes, should be applied. I use Bentley's, which is also a good anti-mildew preparation.

The Peach-house started in January.—The trees in this house are nearly as forward as in that which was started one month earlier, and the same kind of treatment applies to it. The inside border is not likely to be dry, the constant syringings and mulch of dung on the surface having kept the soil moist; but where trees are not growing strongly, apply a Vine-manure, and then water copiously when water becomes necessary. This kind of treatment attracts the roots to the surface, and produces fruitful wood, as well as swells the fruit to a fine size, even in poor soils.

The Peach-house started at the beginning of February.—If the fruits have set very thickly, there will still be some that need removing at this the second thinning; but do not remove all, rather reserve some for another thinning in a week or ten days. The treatment is the same as for the earlier houses. If aphides infest the trees, syringe with quassia-water, fumigation being risky. With lengthening days and more sunshine, this Peach-house will progress more rapidly than the earlier ones. Maintain a night temperature of 60°, and close in the afternoon with sunheat at 80°. Syringe the trees twice a day, and keep a moist but not stuffy atmosphere; and help the swelling of the fruits with Vine-manure sprinkled on the soil, washing it in with tepid water, or employ weak manure-water from the cowhouse instead. The trees that are to provide ripe fruit in July and August should be kept at 60° by night, and be treated generally as directed for trees started a month earlier. The trees in the latest house should be kept back as much as possible with all the ventilators open, but when the flowers open, let the night temperature be 50° to 55°. Guard against frosty cutting winds; damp the paths occasionally, and afford air night and day.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bleton, East Budleigh, Devonshire.

The Fig.—After this date it is safe, even in the colder districts, to remove protective materials from the trees. This done, remove the very thin and the more sappy, gross shoots; and in fastening the shoots to the wall or fence, do not crowd them together so much as to obstruct the sunlight, or the wood will be ill-ripened, and the fruit-crop the next year a poor one. A space of from 12 to 15 inches between the chief branches will allow of good space to lay in lateral shoots for next year's bearing.

The Pear.—In less favoured counties than Devon, Pears usually occupy warm walls, as in the case of Apriots and Peaches here. Where this is the case, and no provision exists for the protection of the blossom, spruce fir-boughs placed thinly over the earlier flowering varieties, which will soon be opening their flowers, will afford protection from hoar frost.

Grafting.—It is yet early to begin to graft, though much depends upon the season in regard to this kind of work, and not a little on the locality. In the south-west, grafting is fully three weeks in advance of the north; and, as a rule, no grafting should be done till the sap has begun to flow in the stock, that is, from the middle of March—the present month, and the operation may be carried on till the end of the month of April. Apples and Pears are the fruits which the private gardener mostly grafts, substituting good in place of inferior varieties on trees of moderate age that are healthy. Such trees usually bear fruits the second year, and the crop increases year by year if the seasons are favourable. The branches that are grafted should not be

more than 6 inches long, measured from the stem, and the ends should be made smooth with a chisel or knife before grafting begins. The scions should consist of mature one-year-old wood, and possess two to four wood-buds, according to the strength of the stock. The saddle-graft is most in vogue in the west, withstanding wind much better when in leaf than the side or whip-graft, though it requires support as growth increases. Crown-grafting is a very simple method, and is done by cutting the rind about 2 inches or so down the stock, and inserting the wedge-shaped scion, having a shoulder cut out so as to rest on the top of the stock; while for large trees, cleft-grafting is about the only means of tackling them, and often two scions are put in at one operation by splitting the stock with a chisel, and inserting two wedge-cut scions, one at each end of the cleft, and making sure that the barks of stock and scion coincide. Whip-grafting, too, is much in use, and when stock and scion are about of a size, it is a successful method. First remove a slip of wood and bark in an upward direction on the stock, and a similar one from the scion with a tongue to fit into a cleft made in the stock. The whip and the saddle-graft hold the scions better, but have no other merit. Tying-in the grafts needs to be done firmly, but not so as to cut into the bark; and raffia is as good as anything for the purpose. Claying a graft consists of forming an egg-shaped mass of clay and horse-dung round the point of union for the purpose of excluding moisture, and preventing the drying-up of the scion; but grafting-wax is much better than clay, and more easily applied.

THE KITCHEN GARDEN.

By T. TURTON, Gr. to J. K. D. WINGFIELD DICBY, Esq., Sherborne Castle, Dorset.

Small Seeds.—Good breadths of the seeds of the following vegetables may now be sown on warm borders, viz., Brussels Sprouts, for the main crop; Pearl and Autumn Giant Cauliflower, Earliest-of-All Cabbage, Winter Mammoth and Christmas White Broccolis, Early Horn Carrot, Sutton's White Gem and Early White Milan Turnips, Globe or Turnip-rooted Beet, for an early supply of roots; and long-rooted and olive-shaped Radishes. All of the above, excepting the Radishes, should be sown in drills made at 1 foot apart. The Radishes may either be sown in drills at 8 inches apart, or broadcasted in beds having a width of 4 feet in the case of the latter, raking the seed into the ground and afterwards patting it with the back of a spade. If small birds are troublesome, especially greenfinches and chaffinches, protect the seeds with nets as soon as sown. Stout sticks, about 3 feet long, placed along the back and front of the border, to which stout lacing wire to carry the nets is easily fixed, is the most effectual way of protecting the seed.

Lettuce.—Make a good sowing of Perfect Gem or Commodore Nutt broadcast, but very thinly, on a sunny border on a well enriched soil, and sow very thinly in drills drawn at 15 inches apart, seeds of the Paris White Cos. Where convenience does not exist for raising White Cos Lettuce-plants under glass, those raised from seed sown now and thinned early, grow away without check, and afford fine Lettuces in succession to those raised in the autumn. Plant out Brown Cos wintered in cold frames or from the seed-bed. If planted on a cool border they will succeed those planted out last autumn on warm borders.

Parsley.—Make a small sowing forthwith on firm soil in a warm position. This will succeed last year's old Parsley bed when the latter affords no more good pickings.

Peas.—Make sowings in quantity, according to the expected demand, from this date, at the least once a fortnight; and a good rule to observe in regard to Peas is to sow as soon as the last sowing is well through the soil. Peas of the Ne Plus Ultra type afford better returns

if sown during March, than at a later date. Sow at the same time Duke of Albany from a reliable stock. In regard to heavy cropping and superior flavour, these two Peas for second early and midseason supply are difficult to surpass. They grow well in most soils. From this date seed may be sown in shallow trenches taken out with spade; and after covering the seed about 1 inch, the soil in the trenches should be about 3 inches below the general level, and the depth should be increased as the season advances. Peas coming through the soil must be protected from sparrows with Pea-guards, or by running three rows of black thread over each row, making fast to sticks placed 6 yards apart, and 1 foot above the ground. Black thread is much more effectual than white, which the sparrows avoid. In northern parts of the country where early Peas are raised in pots or in other ways, these should now occupy cold pits or frames, and should be well hardened off. I have long since given up raising early Peas in this way, as from sowings made on a warm border as early as the state of the ground will admit in January, these come up on the first change to open weather in February and grow away; even after a month of continuous frost, our earliest Peas sown on January 13 on a warm border, and also in the open quarter, were well through the ground at the beginning of the present month.

THE FLOWER GARDEN.

By R. DAVIDSON, Gardener to EARL CADOGAN, Culford Hall, Bury St. Edmunds.

The Rosary.—A commencement with the pruning of the bushes, &c., may now be made, choosing first the hardiest Roses. Although the methods of cultivation adopted with these varieties is varied, and must in their nature differ, the end in view is the same, viz., the suppression of certain parts to promote the building up of others. Strong-growing varieties of H.P.'s and H.T.'s should have all unripened growths cut hard back, and the stout, well-ripened shoots retained at from 14 inches to 18 inches in length, and the wood of three and four years old cut out of the centres as far as may be practicable. Moderate-growing varieties may be left at from 8 inches to 12 inches, and weak-growing ones at about three buds from the base. If pegging down is desirable, let long shoots be retained, and bend down and peg them early next month. Roses which are grown for furnishing flowers for cutting require but little pruning beyond the cutting away of dead wood, and regulating the shoots. Some varieties of Teas and Noisettes will, in some localities, have suffered from frost, and stand in need of having the dead portions removed down to living wood. The plants that have thus suffered will lose much of their vitality, and the display of blossoms will be poor. Standards, than which no other form of training the Rose is more ornamental when the plants are well grown, may have the branches carefully pruned and regulated as to the distance they stand apart, and according to the habit and vigour of the variety. Test every stake, and put new ones where they are required, making all ligatures secure, and using neat pads of leather or cloth to preserve the bark from friction. Afford all beds, borders, and solitary plants a dressing of rotten cow-manure, forking it carefully into the soil.

Evergreen Shrubs.—Isolated specimens of Laurel, in order to maintain the desired character in form, may have the strong shoots neatly cut back, and the whole surface of the crowns made even with the knife. The common Laurel is a useful shrub for massing; and for covering slopes it should be cut quite low down. Where hollies are used for topiary work, the same kind of pruning may be carried out at the end of the present month. With the advance of spring, specimen plants growing in tubs must be afforded water copiously at the root, and occasionally some artificial manure and soot-water.

FRUIT REGISTER.

PLUM ANNA SPÄTH.

This variety is figured in the February number of the *Bulletin d'Arboriculture*, &c., and is described as a tree of vigorous growth, hardy, and fertile. The fruits are about 2½ inches long, oblong, a little flattened at both ends, purple, with a bluish "bloom"; flesh Apricot-coloured, juicy, and of good flavour. It flowers late, and ripens its fruit in October.

APRICOTS.

M. Mouillefert, in a recent number of *Le Jardin*, gives a description and a coloured figure of two varieties of Apricots, which he considers to be primitive forms of the Apricot. These varieties were found in Cyprus, where they bear freely, the fruits being largely used for culinary purposes. The varieties are reproduced from seed.

NURSERIES IN THE UNITED STATES.—We take the following figures from the *American Nurserymen*. They show some of the results of the late census, and indicate very strikingly the differences between the state of affairs in 1890 and in 1900. The figures give the number of nurseries in certain States, and the value of the products in dollars:—

| State. | 1890. | | 1900. | |
|---------------------|-------|------------|-------|------------|
| | No. | Value. | No. | Value. |
| Alabama | 15 | \$ 272,152 | 22 | \$ 179,300 |
| Arkansas | 68 | 80,410 | 47 | 101,455 |
| California | 166 | 4,158,851 | 141 | 1,725,945 |
| Colorado | 23 | 106,250 | 21 | 121,925 |
| Connecticut | 20 | 146,509 | 23 | 284,600 |
| Delaware | 35 | 111,805 | 11 | 49,900 |
| Idaho | 8 | 124,000 | 6 | 67,025 |
| Maine | 41 | 180,912 | 16 | 78,400 |
| Massachusetts | 120 | 1,393,666 | 49 | 314,600 |
| New Hampshire | 5 | 8,166 | 8 | 32,000 |
| New Jersey | 145 | 1,712,464 | 54 | 646,475 |
| New York | 530 | 10,609,806 | 237 | 3,607,107 |
| Pennsylvania | 311 | 3,134,780 | 95 | 944,790 |
| Rhode Island | 9 | 36,000 | 9 | 185,300 |
| Vermont | 17 | 35,000 | 4 | 28,500 |

A PLANT THAT CATCHES CHICKENS.—In the *Journal of the Department of Agriculture of Western Australia*, there lately appeared an account of a plant which is described as being a perfect death-trap for chickens. As they feed or play amongst it, it enmeshes them, lacing them round with its long tendrils as with so much twine, and holding them until they are released or die of starvation. Seven chickens about a fortnight old were rescued from the plant in one day. The matter being referred to the Government Botanist, he (Dr. MORRISON) replied:—"The plant is *Boerhaavia diffusa*, a native of all the Australian States and of Polynesia, and the warmer parts of Asia and Africa. It belongs to the natural order *Nyctaginaceae*, and probably like other species of the same family, possesses medicinal qualities. More commonly, the plant is not provided with hairs, but in the form sent it is covered all over with erect, jointed, rigid, or almost spiny hairs of varying length, and to these it owes its faculty as a chicken-catcher. The chicken is caught by these stiff hairs fixing themselves on its tender skin under the young feathers, and the more the bird struggles the more the flexible branches become wound round its body and its escape becomes more hopeless."

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.

| | |
|---------------------|---|
| WEDNESDAY, MAR. 19. | Torquay Gardeners' Society, Spring Show is postponed until 26th inst. |
| | Royal Botanical Society, Meet. |
| THURSDAY, MAR. 20. | Linnean Society, Meeting. Horticultural Show in Manchester Free Trade Hall. |
| FRIDAY, MAR. 21. | Special Meeting, Royal Hort. Society, at the Drill Hall, Buckingham Gate, at 3 p.m. |

SALES FOR THE WEEK.

| | |
|----------------------|---|
| MONDAY, MARCH 17.— | Lilies, &c., by Protheroe & Morris at 12.0. |
| TUESDAY, MAR. 18.— | Greenhouse Plants, &c., Aberdeen Park Nurseries, Highbury, by Protheroe & Morris, at 12.0.—Roses and other Plants, by Pollexfen & Co. |
| WEDNESDAY, MAR. 19.— | Roses and other Plants, at Stevens' Rooms.—Azaleas, Palms, &c., by Protheroe & Morris, at 12.0. Lilies, &c., at 5 p.m. |
| THURSDAY, MAR. 20.— | Roses and various Plants, by Pollexfen & Co.—Dwarf Japanese Plants, &c., by Knight, Frank & Rutley, 9, Conduit Street, W. |
| FRIDAY, MAR. 21.— | Lilies, &c., by Rendell & Searle, at 12.30.—Orchids, 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 —43° 0'.

ACTUAL TEMPERATURES:—

LONDON.—March 12 (6 P.M.): Max. 54°; Min. 43°.

March 13.—Fine.

PROVINCES.—March 12 (6 P.M.): Max. 53°, Scilly; Min. 39°, Orkneys.

THE PROPOSED HORTICULTURAL HALL.

WE have been requested to publish the following notices:—

ROYAL HORTICULTURAL SOCIETY,
117, Victoria Street, S.W.

Notice is hereby given, that a General Meeting of the Society will be held at 3 p.m., on Friday, March 21, at the Drill Hall (London Scottish), Buckingham Gate, S.W., to receive from the Council and, if approved, to adopt a report recommending a proposed site for a horticultural hall and offices.

Fellows are requested to show their tickets at the door. None but Fellows will be admitted.

By order of the Council, W. WILKS, Sec.

It is important that all Fellows should endeavour to attend this meeting.

REPORT

Presented to the Council of the Royal Horticultural Society by the New Hall Committee, February 25, 1902.

GENTLEMEN.—Your Committee was appointed on June 4, 1901. It consisted of Baron Sir Henry Schröder, Bart., Chairman; Sir Trevor Lawrence, Bart., V.M.H., Harry J. Veitch, Esq., F.L.S., Dr. Masters, F.R.S., N. N. Sherwood, Esq., V.M.H., Rev. W. Wilks, M.A., Secretary. It has since been enlarged by the addition of the Rt. Hon. the Earl of Ilchester, and Henry B. May, Esq.

The Committee was appointed "to consider the question of a Horticultural Hall, and to report thereupon to the Council.

Your Committee has held fourteen formal meetings, besides several informal, for the inspection of sites by various members of the Committee.

At the first meeting, Baron Schröder made a statement in regard to finance, concluding with the words, "The financial part of the question need not cause any insuperable difficulty." It was therefore decided that the first matter for the Committee to engage upon should be the finding of a suitable site.

Five different sites have been very carefully inspected and enquired into, with the result that four have been dismissed as unsuitable for one reason or another.

Your committee strongly advise the adoption of the fifth site, which they regard as suitable for the Society's purposes, all circumstances considered. They do not believe that any better site can be obtained which would not prove to be altogether beyond the financial resources likely to be available.

The first site investigated was that known as Niagara, covering an acre of land (about 40,000 square feet), and with a large circular building. The price of the freehold was fixed at a little over £100,000. Probably at least £5000 would have been required for adapting the building for the Society's purposes, and another £5000 or more for building suitable offices. The rates and taxes would also have been exceedingly heavy. Long and careful consideration was given to this site, but after the fullest enquiry with regard to borrowing upon the freehold, and the rate of interest required, Baron Schröder announced at the fourth formal meeting of the committee that the rate of interest required for borrowing on Niagara is so high that, considering the large initial outlay required, he had reluctantly but decidedly come to the conclusion that the property was too large and too costly to be further entertained.

The second site was one in the Buckingham Palace Road, containing 15,190 square feet. This site also received careful consideration, but was eventually dismissed, on the ground that a rent of £700 a year, coupled with an obligation to expend at least £20,000 on buildings, was too high a price for the Society to pay for a lease of eighty years only.

The third site was bounded by Vauxhall Bridge Road, Francis Street, and Carlisle Place, and included the fine building suitable for offices, &c., known as the Old Cardinal's House. The whole site proposed contained 22,500 square feet. This property commended itself strongly to the Committee, but it had the disadvantage of belonging to three different owners, and also of involving the necessity of obtaining certain permissions from the London County Council. As soon as definite negotiations were entered into with the various owners, it was apparent that an agreement as to price could not be arrived at, and this site was most regretfully dismissed.

The fourth site was in Francis Street, consisting of 15,000 square feet, but the rent asked, viz., £1,400 a year for a long lease, was considered to be beyond the Society's means.

The fifth site is in Vincent Square, at the corner of Bell Street. It has an area of 17,565 square feet, and the rent asked is £690 a year for a lease of 999 years. (The present Drill Hall contains 7,200 square feet.) Your Committee recommend the adoption of this site.

The Ecclesiastical Commissioners, the

owners of the land, stipulate that a sum of not less than £15,000 should be spent on a building and offices, and your Committee are advised that the rates would not exceed £400 a year, which with the rent would make an annual expenditure of £1,100; or after deducting the present cost of hall and offices, £320 a year, it would involve an increase of expenditure of £780 a year. The approaches to Vincent Square are not at present all that could be desired, but two new roads are already decided upon; one direct from Francis Street, starting from exactly opposite the New Cardinal's House; and the other from Horseferry Road, to the corner of the site in question in Bell Street.

In considering the extra annual cost, your Committee have not made any calculation of either the additional expense of caretaker, light, and fuel, nor for the possible income from letting part of the buildings to horticultural societies, or the great hall for meetings, &c. Your Committee believe that a sufficient sum to cover the erection of the necessary buildings may be raised by public subscription, towards which promises amounting to £8,000 have already been received. Signed on behalf of the Committee, TREVOR LAWRENCE.

MEMORANDUM by the COUNCIL.

The Council of the Royal Horticultural Society consider it desirable at the present juncture to make to the Fellows a general statement of the policy they intend to pursue.

The Council are fully aware that a considerable number of Fellows desire that a garden better situated than Chiswick should be secured as a memorial of the centenary of the Society.

It was also shown unmistakably at the late general meeting that a widely-felt desire exists that a better Hall and offices should be provided, which the Society would have completely under its own control.

The Council desire to carry both these objects to a successful issue, and looking at the history of the Society during recent years, they see no reason why this should not be done.

The practical question at the moment is, which of the two shall have precedence, as they certainly cannot both be proceeded with at the same time.

The policy of the existing Council is to endeavour to secure first a suitable Hall and offices near those now occupied at Westminster, and when that is done, to devote their attention at once to the acquisition of a site for a new garden.

The reasons which actuate the Council in adopting this order are many, and among the more important are the following:—

1. They consider it to be the more generally acceptable to those Fellows who take an active part in promoting the welfare of the Society.

2. They have already received promises of financial support to the extent of £8,000 towards the building, whereas no such support has at present been tendered towards securing a garden.

3. A site for a Hall, 400 yards from Victoria Street, and in a rapidly improving neighbourhood, as good as can ever be expected to be within the means of the Society, is at our disposal.

4. The Council are of opinion, and have

been professionally advised, that the rent asked is a moderate one, and is within the means of the Society. The proposed lease is for 999 years, which is equivalent to a freehold.

5. They are also of opinion that the provision of a good Hall and offices would in itself attract a large number of new Fellows, and would in that respect help the subsequent acquisition of a garden.

It should be noted that it has been found necessary to take the decision of the Fellows without any delay, owing to the obligation of terminating certain leases at Lady-day.

The Council confidently appeal to the Fellows, of whom they hope to see a full attendance at the Drill Hall on the 21st at 3 P.M., to support the policy briefly outlined in this memorandum. They trust that the Fellows will not allow the Society to be placed in the undignified position of doing nothing to celebrate so memorable an occasion as its Centenary, which would be the probable result of the rejection of this proposal.

The Council hope to be in a position to place preliminary plans and estimates before the Fellows on the 21st. Having regard to the unbroken continuance of large additions to the Fellowship roll, and to the ever-increasing interest taken throughout the Empire in every branch of horticulture, the Council feel that they will not appeal in vain for the funds necessary to provide a satisfactory Hall and Offices without serious encroachment on the invested funds of the Society. *W. Wilks, Secretary. By Order of the Council, March 11, 1902.*

Royal Horticultural Society. THE most pressing needs of the Royal Horticultural Society are the possession of a home and of a garden. When we speak of the Royal Horticultural Society in this connection, we consider it, not as a local society, but as the corporate representative of British horticulture. As such, no one will deny the necessity for a common meeting place, with accommodation for offices, library, lecture-room, exhibition-hall, and other requisites. To provide these will be a fitting method of celebrating the centenary.

As to the garden, that will be, rather than is, a necessity. We have a garden at our disposal for nearly twenty years. It is, no doubt, very desirable to have a new one of modest dimensions in a more suitable situation. The realisation of that desire can wait. Meanwhile, let us make the best of what we have.

Now, as to the Hall. It will be remembered that when the schemes for a garden or gardens in the country were laid before the Fellows, they were ultimately rejected by large majorities. After the letters of Sir WILLIAM THISELTON DYER, and the speeches and explanations of other prominent Fellows, no other course was possible consistently with commonsense. The lapse of time does but emphasise this conclusion. As a result, the Council was empowered to find a location for the erection of suitable premises. The Council delegated this work to a committee, consisting of some of its own members, together with some outside Fellows, and headed by Baron Sir H. SCHRÖDER.

Several sites were accordingly examined. All but one were found unsuitable, either

on the score of expense, shortness of tenure, or for some other reason. At length a plot of ground in Vincent Square, Westminster, an open space of some ten acres, has been found. It is not an ideal situation, but it is distinctly a good one, and in a few years there is no doubt that, owing to the improvements now in progress, it will be excellent. It is, as the map published in our present issue shows, within a few minutes' walk of the existing offices and Drill Hall, near to St. James's Park Station, not far from Victoria, close to the new Roman Catholic Cathedral, and in the immediate vicinity of a large residential upper and middle class community. Access to it is already better than in the case of the Drill Hall.

Now, as to the financial question, experts like Baron SCHRÖDER tell us it is not beyond the means of the Society, and need not entail burdens beyond what the Society may assume under existing circumstances, without undue risk.

Baron SCHRÖDER has shown his own confidence in the scheme by promising five thousand pounds towards its fulfilment. What is of even greater significance, he has actually become responsible for the ground-rent until the building is erected. Further than that, three gentlemen have already promised the sum of a thousand pounds each. So that before a single penny has been solicited from the Fellows, a sum of eight thousand pounds has been spontaneously promised, while nothing has as yet been promised for the garden scheme. The Society has ten or twelve thousand pounds in reserve, which can be utilised for purposes of paying interest. Its annual income is increasing rapidly. Since the beginning of the year more than a hundred new Fellows have been elected than during the corresponding period last year. The financial outlook was never so good. Circumstances were never so propitious. They are not likely ever to be more so. The Fellows, therefore, have now the opportunity for which they have been longing. It is for those gentlemen who are eager to secure a Hall to act up to their convictions, and transmute their words into acts. If they do not, they will create a lamentable dead-lock, and perpetuate those inconveniences which all are loud in decrying. It is the bounden duty of every Fellow to attend the Special Meeting of the Society which will be held in the Drill Hall, James Street, Westminster, on Friday, March 21, at 3 P.M. The proposal as explained in the lucid and straightforward Council Memorandum will then be presented for approval or rejection. Surely among those who use the Drill Hall and are familiar with the workings of the Society, there can be no possible doubt as to the result. As to the country Fellows, whilst a hall would be of the greatest convenience to them, a garden would be all but useless. An International Horticultural Exhibition could well be combined with the hall scheme. Who knows but that Vincent Square itself could be obtained for such a purpose, and then—the prospect is almost too brilliant for the imagination!

LINNEAN SOCIETY.—On the occasion of the evening meeting, to be held on Thursday, March 20, 1902, at 8 P.M., the following papers will be read:—1. Electric Response in ordinary plants under Mechanical Stimulus, by

Prof. J. C. BOSE. 2. On the Fruit of *Melocanna bambusoides*, Trinius, an Exalbuminous Grass, by Dr. O. STAFF, A.L.S., &c. 3. On *Malacostraca* from the Red Sea, collected by Dr. H. O. FORBES, by Messrs. ALFRED O. WALKER, F.L.S., and ANDREW SCOTT.

"BOTANICAL MAGAZINE."—The plants figured in the March number are:—

Passiflora ambigua, Hemsley, t. 7822, having flowers somewhat like those of *P. alata*, but with terete stems and elliptic leaves (see pp. 169 & 171 in the present issue).

Jasminum Maingayi, C. B. Clarke, t. 7823.—A climbing shrub, with stalked, ovate, entire acuminate leaves, and terminal tufts of white flowers, each flower with a corolla-limb of eight to ten segments. Native of Penang.

Masdevallia elephanticeps, Rehb. f., t. 7824.—A remarkable species; also mentioned by REICHENBACH in the *Gardeners' Chronicle*, 1876, ii., 516, under the name *M. gargantua*. The flowers are 8 to 9 cent. long, with a thick calycine tube about 2 to 3 cent. long, expanding into a 2-lobed limb, the upper segment solitary, free to the base, yellowish-green, oblong, with a long tail; the two lower ones united to the middle with a large crimson blotch in the centre, each ending in a long tail. It was discovered on the mountains of New Granada by WARSCWICZ at an elevation of 7,000 to 10,000 feet.

Aster Tradescanti, Linnæus, t. 7825.—The supposed original of the Michaelmas Daisy, introduced before 1633 by JOHN TRADESCANT, doubtless from Virginia.

Impatiens grandiflora, Hemsley; *Gardeners' Chronicle*, 1901, vol. i., p. 110, fig. 47.—The finest of the Balsams in cultivation, with rosylilac flowers, streaked and blotched with carmine. Introduced from Madagascar by Mr. WARPUR.

"THE COUNTRY."—We have pleasure in noticing the first number of a new periodical, entitled *The Country*, and edited by Mr. HARRY ROBERTS. The magazine is a sixpenny one, and is to be published monthly from Aldino House, 29 and 30, Bedford Street, W.C. The March number includes a portrait of the Very Rev. S. REYNOLDS HOLE, Dean of Rochester; country gossip by F. W. BURBIDGE, Canon ELLACOMBE, Hon. Mrs. EARLE, S. ARNOTT, and the Editor; and various articles, illustrated for the most part by photographs, on topics included in the scope of the paper. These subjects are all connected with the country, for the publication deals and will deal with: 1, drawings, by HERBERT RAILTON, of the moated houses of England; 2, study of wild life in Britain, illustrated by photographs of birds, beasts, and insects; 3, fishing, shooting, hunting, and other sports and games; 4, dogs, horses, cattle, poultry, bees, &c.; 5, the fishing rivers of Britain.

LYCHEES IN NATAL.—Looking at the favour with which the fruit is received in Natal, an extended planting of the tree is in contemplation, so at least we are informed; possibly the prices paid for imported fruit may have something to do with the report. London boys, and girls also, are not in love with the Lychee; they declare it a nut without meat in it. Certainly in many we have seen the contents had shrivelled into a dirty-looking bit of "something," as a small purchaser termed it; and the whole thing was fit only for playing ping-pong with!

SWEET PEA CUPID.—Mr. RÖMER, of Quedlinburg, tells us that seeds of this section ripened in America do not flower well in Germany. The plants do well, but drop their

buds. This is not the case with plants raised from German seeds. Mr. RÖMER has sent us seeds for trial, and some have been sent to Chiswick. We have ourselves noticed the tendency to drop the flower-buds before expansion in the case of plants grown from American seed, but we cannot say at present whether on the same soil English-grown seed does better.

NEW PARK AT ELTHAM.—An effort is being made to secure a large acreage for the formation of a public park in this Kentish suburb of the "Great Wen." The Woolwich folks promise largely, and soon the matter may be expected to take proper shape—much of the money necessary is already promised.

LAWNS.—In a suggestive green cover we have a pamphlet on garden lawns, tennis lawns, bowling greens, putting greens, and cricket grounds, by SUTTON & SONS, Reading. The subject-matter is good, and the advice given excellent, and we recommend the pages to anyone needing help with lawns at this, the gardeners' busy season. Publishers: SIMPKIN, MARSHALL, HAMILTON, KENT & Co., Ltd.

"CLAY'S SUCCESSFUL GARDENING."—This is the second edition of a small handbook of practical horticulture, issued by Messrs. CLAY & SON, Stratford, and E. W. ALLEN, 4, Ave Maria Lane, E.C., the former firm being the proprietors of Clay's Manures. The new edition has been revised, partly rewritten, and reduced in price, so is sure of favour from the public, for whom it is intended. Among the contributors we note the names of more or less well known professional, amateur, and market growers, whose articles are worth careful reading.

"IN A MINSTER GARDEN."—This book, by Dr. STUBBS, Dean of Ely, was lately favourably noticed in our columns. We welcome the second edition of the "Causerie," the appearance of which is proof of the appreciation with which it has met. We may mention again that the book is full of chatty information and illustrations of charming nooks in and about Ely and its minster, and that the publisher is Mr. ELLIOT STOCK, 62, Paternoster Row, E.C.

COLD STORAGE OF FRUIT.—Various experiments have been made in France as regards storing fruit, flowers, and vegetables, in ice chambers. M. LOISEAU, President of the Montreuil (Seine) Société d'Horticulture, showed at the autumn exhibition of the National Horticultural Society at Grand Palais some Peaches that had kept perfectly in a refrigerator built according to the plans of M. DOUANE, of Paris. The Peaches had been kept in the chamber fifty-three and fifty-eight days, and represented the varieties Mignonne, Bonouvrier, Belle Beauce, Impériale, Alexis Lepère, and Galande. A wholesale dealer offered four francs each for them. The experiments will be continued.

THE NATIONAL SWEET PEA SOCIETY'S schedule, just to hand, shows that the competitive classes arranged for the forthcoming show on July 14 and 15 next, are much the same as those of last year. There are not so many open classes, however, nurserymen and seedsmen being excluded from several in most of the sections.

STOCK-TAKING: FEBRUARY.—The Board of Trade Returns for the month of February show, to some extent, the effect of endeavouring to anticipate the modifying hand of the Chancellor of the Exchequer, in the matter of fettering instead of freeing the breakfast-table. Surely this latter was a consummation most devoutly to be wished; those whose duty it is to "make ends meet" do not appear to

think so now—hence the rise or fall in quantity of food imports. Really, then, figures do not at present count for much—they will after Easter. The value of last month's imports is just £41,691,591, against £39,714,439—or an increase of £1,977,152. Sugar, both refined and raw from Germany, bulks largely; cocoa went up, but tea and coffee gave way; but fruit figures well, as will be seen. Wines and brandy show a fear lest the hand of the Chancellor should lay hold of them. Here is our usual extract from the "summary table."

| IMPORTS. | 1901. | 1902. | Difference. |
|--|------------|------------|-------------|
| | £ | £ | £ |
| Total value ... | 39,714,439 | 41,691,591 | +1,977,152 |
| (A.) Articles of food and drink—duty free ... | 11,441,433 | 10,836,854 | —604,579 |
| (B.) Articles of food & drink—dutiable ... | 3,948,374 | 4,358,500 | +410,126 |
| Raw materials for textile manufactures ... | 7,657,682 | 8,695,331 | +1,037,649 |
| Raw materials for sundry industries and manufactures ... | 3,135,406 | 3,379,374 | +243,968 |
| (A.) Miscellaneous articles ... | 1,388,060 | 1,708,938 | +320,878 |
| (B.) Parcel Post ... | 110,182 | 139,711 | +29,529 |

There can no longer be any doubt that the Banana has come to stay with us; looking back, the truth of this will be found in our monthly table of fruit imports, which for February reads as follows:—

| IMPORTS. | 1901. | 1902. | Difference. |
|---|---------|---------|-------------|
| | Cwt. | Cwt. | Cwt. |
| Fruits, raw:— | | | |
| Apples ... | 166,577 | 123,651 | —42,926 |
| Apricots and Peaches ... | 164 | 104 | —60 |
| Bananas... bunches | 87,125 | 154,861 | +67,736 |
| Grapes ... | 606 | 1,089 | +483 |
| Lemons ... | 85,978 | 51,697 | —31,281 |
| Nuts—Almonds ... | 6,726 | 10,625 | +3,899 |
| Others, used as food ... | 25,856 | 28,591 | +2,735 |
| Oranges... .. | 638,306 | 779,778 | +141,472 |
| Pears ... | 667 | 854 | +187 |
| Plums ... | 106 | 125 | +19 |
| Unenumerated, raw... .. | 6,144 | 4,852 | —1,292 |
| Fruits, dried— | | | |
| Currents, for home consumption ... | 53,702 | 42,627 | —11,075 |
| Raisins ... | 16,653 | 18,023 | +1,370 |
| Vegetables, raw:— | | | |
| Onions ... bush. | 650,948 | 637,317 | —13,631 |
| Potatoes ... cwt. | 382,772 | 93,190 | —289,582 |
| Tomatoes... .. | 36,310 | 23,938 | —12,372 |
| Vegetables, raw, unenumerated ... value | £25,960 | £35,435 | +£9,475 |

By the way, some are of opinion that Lemons will give way in favour of Bananas; that, we would say, continues a moot point, and the Lemon—no fruit in fact—could be spared from our menu. The imports for the first two months of the year foot up £91,822,939, against £85,701,955 for the same period this year—showing an increase of £6,120,984; and one day of last month was given over to the obsequies for Her late Majesty, QUEEN VICTORIA.

THE EXPORTS

for last month were valued at £21,312,276 against £21,037,455 for the same period in 1901, or a gain of £274,821. The gain may be small—it is a welcome change to the dull monotony of "decrease," noted month by month of last year. Coal shipments show a heavy fall, but the exports of this raw material last year at this time were very high; looking once more at the action of the Exchequer officials. Ships built for export showed increased value, as did materials for textiles;

and here China shows what may once more be expected from her merchants, even with Japan as her next-door neighbour. The value of the exports for the first two months of the year are placed at £45,581,450, compared with £45,790,986 for the same period in 1901—a decrease of £209,536; a trifle surely to be made up in the Returns for March!

PLANTING FRUIT TREES ON FARMS.—Herefordshire fruit is famous, and a number of landlords and tenants of this fertile county assembled under the auspices of the Fruit Growers' Association at Hereford recently, for the purpose of discussing the best terms to be arranged upon as between landlord and tenant when planting fruit-trees. Mr. MANBY POWER, a large landowner and fruit-grower, near Ross, suggested that the landlord should let the tenant plant, and at the expiration of his tenancy allow him to have three-quarters of the value of the trees. Mr. JOHN WATKINS, another large fruit-grower, said his idea was that if a landlord wished to improve his estate by planting or fitting up orchards he should have full power to do so, if the tenancy was an annual one, on notice of twelve months. If the tenancy was on lease, the landlord should have no power to plant without the tenant's consent. If a tenant wishes to plant orchard-trees, he should have power to do so after giving twelve months' notice, and at the end of his tenancy claim full compensation for the cost of the trees, protecting, planting, and looking after them the first four years, with compound interest on the cost. The suggestions met with general approval, and a committee was appointed to report on the subject.

THE CORNWALL DAFFODIL AND SPRING FLOWER SOCIETY, writes Hon. JOHN BOSCAWEN, of Tregye, "had the honour of showing their loyalty to her Majesty (who is Patroness of the Society), during her visit to Cornish waters, by sending cut flowers to decorate the Royal cabins and other parts of their Majesties' yacht *Victoria and Albert*. The flowers were conveyed to the Royal yacht by me on Friday, March 7, before their Majesties' arrival, and the flowers were presented to her Majesty by the President, the Earl of MOUNT EDGECUMBE. The flowers and shrubs were all grown out-of-doors in Cornwall and the Scilly Islands, and consisted of Mimosa, Rhododendrons, Violets, Anemones, Primroses, Crocus, Iris, and Daffodils. A more beautiful collection of flowers could not have been produced, the Violets and Rhododendrons being especially of great beauty. The flowers filled twenty-six market boxes. Both the KING and Queen ALEXANDRA expressed their admiration at the beauty of the display and their gratification at receiving the floral tribute; and the QUEEN further honoured the Society by wearing some of the flowers in her dress on every occasion during her visit, and took some away with her in an open basket in the Royal train." When one hears so much of the immense quantities of flowers coming from abroad, it is only right for the public to know what their own country can produce at this time of year.

WOLVERHAMPTON FLORAL FETE.—The fourteenth annual show will be held in the West Park on July 8, 9, and 10, in association with the Wolverhampton Art and Industrial Exhibition. The schedule has just been issued, and shows that the value of the prizes has been largely increased, and that new classes have been provided for Begonias, Sweet Briar, Tea and Noisette Roses, hardy flowers, laced Pinks, Carnations, Gloxinias, and arrangements of cut flowers. Altogether a sum of nearly

£800 is offered in prizes, besides a Silver Challenge Trophy, Gold, Silver, and Bronze Medals. The beautiful West Park is an admirable place for the exhibition, and although the show has been increasingly successful ever since its establishment, there is little doubt but that in the present year, when so many people are likely to be attracted to Wolverhampton by the Art and Industrial Exhibition, the horticultural exhibition will be better than any previous one. There is never such a display of fruit at Wolverhampton as one sees at Shrewsbury, but the date of the exhibition which makes this impossible at Wolverhampton is also the reason why at the latter place there are always such fine shows of Roses, Pinks, Carnations, Pansies, Violas, &c., in addition to the collections of plants. The Secretary is Mr. W. E. BARNETT, SNOW Hill, Wolverhampton.

to remedy it by the underground watering of gardens by means of his Bamboo water-spears. These, briefly described, are hollow canes, to be thrust into the soil and filled (perchance with a funnel) from a can of water. We leave patient readers and gardeners to learn further details from the book, and also commend to their notice the chapters on the culture of Rose trees and the propagation of Rose trees, included in the volume.

"RUBBER CULTIVATION IN WEST AFRICA."

This handbook is by Mr. J. H. HOLLAND, Curator of the Botanic Gardens, Old Calabar, Southern Nigeria. It contains mention of six of the principal Rubbers of the world: Para, Ceara, African Vine, African Tree, Central American, and Assam, representing the three natural orders Euphorbiaceæ, Apocynaceæ, and Urticaceæ. Para rubber is not successful in West

London County Council has agreed to join hands concerning the projected improvements, which will therefore stand a good chance of being carried out.

DAFFODILS AND LILIES.—Mr. PETER BARR, the Daffodil King, for whom we shall have to invent a new epithet to indicate his feats as a traveller, has reprinted his lectures in Cape Town on the Lilies of the world, and on the cultivation of the Daffodil. The lectures were amply worth publishing in a more permanent form, and on the return of this modern Ulysses we may hope for a further publication.

FLOWERS IN SEASON reached us recently from Ard Cairn, Mr. BAYLOR HARTLAND'S nursery near Cork. They included very nice, well-developed flowers of Ard Righ, one of the earliest to open its flowers in the open air, and another equally good. Next probably to Scilly, Cork produces the greatest quantity of Narcissus in the three kingdoms, as also excellent bulbs.

BAILIFF OF THE ROYAL PARKS AND GARDENS.—The First Commissioner of Works has promoted Major WILLIAM CLIVE HUSSEY, late Royal Engineers, Assistant-Bailiff of the Royal Parks and Gardens, to be Bailiff of the Royal Parks and Gardens, in the room of Colonel MORETON JOHN WHEATLEY, C.B., late Royal Engineers, who has retired under the age limit.

THE HORTICULTURAL CLUB.—A pleasant evening was spent at the Club on Tuesday last, the occasion of the monthly dinner. In the absence of the Chairman, Sir J. T. D. LLEWELLYN, Bart., the chair was occupied by the vice-chairman, H. J. VEITCH, Esq. After dinner, a discussion was opened by Mr. CHAS. E. PEARSON, whose subject was "Bird Life in relation to Horticulture"—a bright and interesting paper. A vote of sympathy was passed with Mrs. SELFF-LEONARD in her recent sad bereavement. Dr. HENRY will be the guest of the Club at the next monthly dinner on April 8.

PUBLICATIONS RECEIVED.—From the Royal Gardens, Kew, *Bulletin of Miscellaneous Information, Appendix II.*, 1902. *Catalogue of the Library: Additions received during 1901.*—*Twenty-fifth Annual Report (for 1901) of the National Carnation and Picotee Society (Southern Section).* The annual exhibition was a very successful one. New flowers were not so much in evidence as on former occasions.—*Cassell's Dictionary of Gardening*, Part 10. From "Hydrocharis to Law," and with coloured Plate of Michaelmas Daisies.—*Eleventh Annual Report (for 1901) of the Society for the Protection of Birds.* Records good work done as regards the restriction of cruelty to birds and the preservation of rare species.—From the Yorkshire College, Leeds, and the East and West Ridings Joint Agricultural Council. *Report on a Test of Varieties of Potatoes at Garforth, 1900-1901.* The results of the test are tabulated according to the varieties employed and the circumstances of their environment.—*The Gardeners' Magazine (Calcutta)*, February. Contents: News and Notes, Notes and Replies, the Editor's Table, Cyclopædia of Indian Plants.—*Der Botanische Garten und das Botanische Museum der Universität Zürich, im Jahre, 1901.* Issued by the Director, Prof. Dr. Hans Schinz.

ROYAL VICTORIA PARK AND BOTANIC GARDEN, BATH.

(Concluded from p. 157.)

[SEE SUPPLEMENTARY ILLUSTRATION.]

"THE DELL" is the name given to a disused old quarry that, owing to the natural shelter it provided, was formed into a small pinetum many years ago. It is the most charming spot in the park to the lover of fine trees, and of conifers especially. There is a magnificent specimen of Wellingtonia (*Sequoia gigantea*), 50 ft. or more high; and the Redwood, *S. sempervirens*, is even a nobler and better specimen of 60 feet high; *Abies Smithiana*, *Taxus baccata* *Dovastonii* (Weeping Yew),

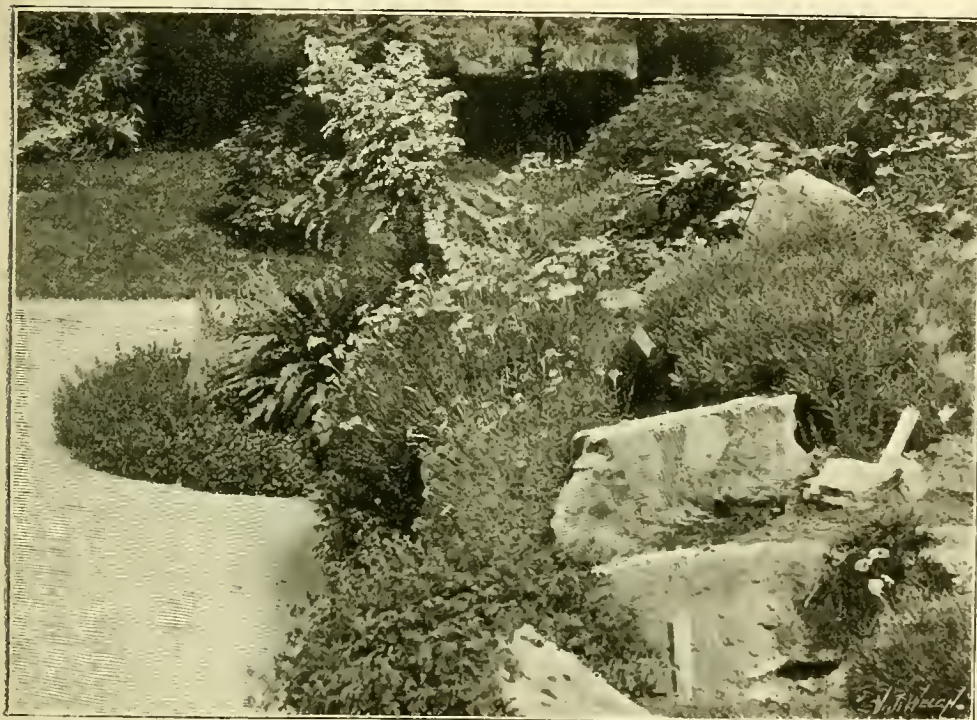


FIG. 55.—PART OF THE ROCKERY AT BOTANIC GARDEN, BATH.

Showing a very fine plant of *Astragalus Tragacantha*; also *Ozothamnus rosmarinifolius* = *Helichrysum diosmæfolium* in bloom, &c.

"UNDERGROUND WATERING OF PLANTS AND GARDENS."—To which are added chapters on the culture and propagation of Rose trees. By JOHN GRANT (London: WARD, LOCK & Co., Ltd., New York, and Melbourne). "Having been an enthusiastic gardener for some fifty years . . . I verily believe I have, in my old age, discovered a most important fact or principle which has hitherto escaped the notice of mankind . . . What I have observed is, that there exists, in very hot, dry weather, a zone of earth at or near the surface, and extending downwards to a depth of several inches, which presents an impassable barrier to the principle, or rather to the action of the principle, of capillary attraction, which I have observed is the great distributing power by which water falling, or collecting, upon the earth unequally, that is to say, in larger quantities at some spots than at others, is evenly distributed over adjoining spaces." This check to "capillary attraction" resulting in an absence of water where water is needed; that is to say, at the roots of plants Mr. GRANT proposes

Africa; Ceara grows in some districts, but is a failure as a rubber producer, as also is Central American. Assam, after ten years' trial, does not yield so well as when growing naturally. Landolphas, from their climbing habit, are not well adapted for cultivation. The native tree (*Funtumia elastica*) possesses many qualities to recommend it. The rubber is of good quality. The book before us includes five large and useful plates.

RARE CONIFERS.—M. OSCAR BIERBACH, of the Botanic Gardens, Belgrade, informs us that he has seeds for disposal of *Abies Apollinis*, *Pinus Penke*, *P. leucodermis*, *Picea omorica*, *Pinus pindica*, and other species not met with in commerce.

SPITALFIELDS MARKET.—There is at length a possibility of getting this popular market extended and renovated, also the surrounding streets widened, all the approaches in fact made suitable for a market with a future. The Stepney District Council and the City Corporation have come to an understanding, and the

presenting a front of about 15 yards long; *Cupressus Lawsoniana*, and several species of *Pinus*, are very well worth inspection. The handsome *Cephalotaxus Fortunei* and *C. drupacea* have not made large specimens, and probably the shade is now too dense for them to succeed.

At one of the entrances to the park is a fine obelisk, erected in 1837 in honour of Queen Victoria; and there are several large vases. The "Victoria" vase was erected in 1880 to celebrate the fiftieth year the park had been opened. The "Miller" or Batheaston vase, shown in our Supplementary Illustration, is said to have been found at Fraseati, near Cicero's villa, in 1759, and to have been subsequently in the garden of Lady Miller at Batheaston Villa.

Since our last issue was published we are informed that the Park in 1830 was laid out from plans of Mr. Ed. Davis, a Bath architect, and father of Mr. C. E. Davis, the present city architect.

THE BOTANIC GARDEN.

A little more than fifteen years ago a valuable collection of hardy plants was left by C. E. Broome, F.L.S., for the botanic garden, and Mr. John Milburn, the present Superintendent of the park and botanic garden, was engaged from the Royal Gardens, Kew, to go to Bath and plant the new collection, and take charge of the old one. A walk amongst the plants with that gentleman is sufficient to convince one that he has the greatest interest in and care for them. The honorary Curator at that time was the late J. W. Morris, F.L.S., and he was responsible for some of the plans followed by Mr. Milburn when laying out and planting the garden. The present honorary Curator is T. F. Inman, Esq.

Directly one enters the gateway, there are to be seen some rather tender and other choice plants growing very well in the grass. Such are *Choisya ternata*, *Olearia macrodonta* (quite hardy here), *Verbascum pannosum*, as a single plant on the turf, and Mr. Milburn says it is a glorious plant in such a position; *Abelia chinensis*, planted in similar circumstances; *Myrtle*, provided with slight temporary protection; *Xanthoceras sorbifolia*, and a seedling from Canon Ellacombe's plant of *Egle sepiaria* (*Citrus trifoliata*), which fruits at Bitton (see fig. in *Gardeners' Chronicle*, April 28, 1900, p. 269). Mr. Milburn hopes that he, too, will obtain fruits from his plant. *Polygonum baldschuanicum* is planted on an exposed portion of the rockery, and succeeds perfectly. Mr. Milburn says that the species is much less effective if growing amidst shelter. His plant grows very stocky, with short internodes. *Daphniphyllum* is the nearest ally to the *Rhododendron*, so far as superficial appearance goes, that is capable of cultivation here, the soil containing a quantity of lime; *Olearia stellata*, *Raphiolepis japonica*, 3 to 4 feet high, and 3 feet through; *Magnolia Soulangeana*, &c., were noticed.

A bog-garden is being formed, and some Bamboos have been planted near to this spot. These will be increased so far as space will permit. There are great banks of *Arabis*, *Phloxes*, *Ericas*, and a grand plant of *Euphorbia Wulfenii*; *Sophora* (*Edwardsia*) *tetraptera*, which has proved hardy here for ten years at least; *Carpenteria californica*, most vigorous plants of *Daphne Cneorum*, the dwarf Willow (*Salix reticulata*), fifty years old, but not more than 2½ inches high; *Shortia galacifolia* in a pocket on the top of the rockery; *Photinia serrulata*, the dwarf Almond which fruited here last season; and beds of *Iris*es, &c. We will not make the list more

tedious by enumerating other species, but there are many that would interest the hardy plantsman.

Our illustration at fig. 55, p. 179, represents a portion of the rockery as it appeared last summer, containing a very fine plant of *Astragalus Tragacantha*, *Ozothamnus rosmarinifolius*, *Pinks*, and other plants in flower, &c. A small collection of British plants is maintained, and a collection of choice British Ferns purchased from the collection of the late Colonel Jones of Clifton.

Sufficient proof is furnished by the plants in the Victoria Park of the genial climate enjoyed by the Bath district, and of the sheltered and favourable situation of Bath itself.

In conclusion, we may remind our readers that it was in the Victoria Park that the Bath exhibition of the Royal Horticultural Society was held in 1873, an event which formed the subject of notes in many issues of the *Gardeners' Chronicle* for that year.

HOME CORRESPONDENCE.

PROPAGATING POINSETTIAS.—May I supplement Mr. Hemsley's able article on p. 163? If very dwarf plants with large heads are required, these may be produced by employing the following method. During the first half of August stake the plants to their full length, and cut halfway through the stem at a joint about 4 inches from the top. For a few days keep the plants shaded during sunshine, and gently dew them with the syringe. In about a fortnight the incision will have callused; the remaining portion of the stem should then be cut, and the cuttings inserted as directed by Mr. Hemsley. These cuttings will quickly root and produce large heads slightly earlier than plants grown in the ordinary manner. If allowed to break and grow on, the plants from which the cuttings were taken will furnish two or three smaller but useful heads of bracts. I can endorse Mr. Hemsley's concluding remarks—as a rule, Poinsettias are "coddled" far too much, but as he says, they must not be left in the cool-house "too" long. In Devon and Cornwall these subjects summer well in cold pits, and the lights may be left off on mild and dry nights. A. C. B.

ADONIS DAVURICA.—In the *Index Kewensis* this plant is given as synonymous with *A. vernalis*, and certainly, so far as appearance is concerned, there is little or no difference between them; but from the garden point of view *A. davurica* has this notable distinction, that it is a long way the first herbaceous plant of the year, coming into flower before the winter Aconites. It can be bought at 6-50 dols. per 100 from the Yokohama Nursery Co. of Japan. Re winter Aconites, I wonder whether other people have had my experience, and found *Eranthis cilicica* a far more reliable bloomer than *E. hyemalis*. A. K. Bulley, Ness, Neston, Cheshire.

A YELLOW SNOWDROP.—Among the clumps of Snowdrops in a cottage garden in this neighbourhood, several flowers have appeared of a distinct yellow colour. The plants differ slightly from the ordinary type. They have the usual pair of leaves, but they are green, not glaucous. The three outer segments of the perianth are slightly narrower, more acute, and less concave; and there is a short tube above the ovary, which is a darker yellow than the rest of the flower. I have never heard of such a variety, nor can I find any record of such. Is it known to English gardeners? I have just gathered from my own garden a Snowdrop with two flowers on the same stalk, one about an inch below the other. It is a case of fasciation, but the union of the two stalks is scarcely visible, and the effect is very elegant. Could such fasciation be induced as a normal character? F. T. Mott, Leicester, February 8.

THE GARDEN AS A HOBBY.—The discussion raised by Mr. Mott's recommendation that old men who retire from business should take to a garden and do part of the actual gardening work themselves, has been an interesting one, but it is not possible to agree altogether with those who advocate either view of the question. However beneficial we who love gardening for itself find it, we must admit that there are many who take no interest whatever in it, and whose entering upon it as a hobby would neither tend to benefit them physically nor mentally. Yet it is probable that many who have not tried gardening as a hobby would benefit immensely, and they would find in the actual labour required a pleasure and both physical and mental advantage. I have known several instances of old men who have turned to gardening in the leisure of retirement, who have found in it true joy and a satisfying hobby at a time when they would have almost died of ennui had it not been for its occupation and engrossing interest. It may be replied that this interest had been fostered by, or had been a legacy from the teachings of a parent, or from seeing her or him busy among their flowers and plants. In many cases this is so, but there are many others in which no such influence can be traced; and we may only suppose that the taste arises from some innate love for gardening, which only awaited leisure to ensure its development. I have particularly one case in view in which it was difficult to see whence this business man derived the taste for gardening which made him one of the keenest of growers of a certain class of plants, not even plants beloved of the multitude, nor such as could be shown to visitors as rare flowers, costing so much money, and to be looked upon as the luxuries of a man who "had made his pile," and could afford to have them. I would go the length of saying that old men who retire from business ought to try gardening for a time to see if it suit their tastes. If it should do so, then they will have alighted on a well of happiness which will never fail them, even though increasing age render them incapable of the actual work required. One thing which always strikes me forcibly in connection with this subject is, the number of retired soldiers and sailors—principally sailors—who become enthusiastic and really good gardeners after their retirement from active work. It is not necessary always to be a disciple of their particular style of gardening to enable one to look upon their efforts with pleasure. Some gardens presided over by these men are often painfully stiff and formal; while some of our old sea-captains show a liking for decorating their gardens with old figure-heads and all kinds of curiosities. Yet they may be keen gardeners, and it is a pleasure to see them so interested in the ancient craft which brings so much health and happiness to those who can enter into it with zest, but which is a cruel bondage to those who have no taste for it. As for blunders in gardening, I fancy that as we know more about it and other things, we grow more painfully conscious of how much we have yet to learn; of how much we knew but have forgotten, and of the difficulty of arriving at the exact truth with regard to many plants. Mr. Fitzherbert has a very suggestive passage bearing on this subject on p. 17 of your issue of January 11; and because a man, however old, is unacquainted with scientific nomenclature, or even with the names or characteristics of the Natural Orders, he may not be debarred from growing his plants well, and may have from them a good deal of the enjoyment received by the one who has the names, habitats, botanical features, and such-like at his fingers' ends. Not that one despises these things; they are most valuable, and the man who has them has sources of pleasure denied to the other; but there is no reason why we should not persuade a man who does not know the difference between a Crucifer and a Composite to continue growing his Wallflowers and his Sunflowers, though ignorant wherein lies the differences of structure they show. Even the man who likes to work about his

garden walks, to tie up his flowers, to cut off faded blooms, and such-like common tasks, but leaves the other things to his gardener or the jobbing man who comes in at intervals, is surely spending his time better than in aimless lounging about the streets, passing his afternoons drowsily perusing the newspapers of which he has long before secured the salient features, or in worse ways passing the time Providence, aided perhaps by his own exertions, has left him to use as he pleases for the remainder of his days. If such a man has a taste for gardening in any of its aspects, by all means let him enter upon it. Those who love it, or come to care for it, will find that it is still not only "the purest," but the most satisfying of human pleasures. *S. Arnott, Dumfries.*

LILIUM GIGANTEUM.—I note that "S. W. F." takes exception to my remark that "Lilium giganteum cannot be grown with any measure of success in the open border;" and he further cites an instance of this Lily thriving in the

wall, and the only safe course open to me is a middle one, the climatic conditions of which may be clearly stated. Only recently a correspondent complained that I had not done *Crinum Moorei* justice, in declaring it "to be too tender to withstand our winters, save in the shelter of a heated wall." The instance he cited was that of a clump growing in a warm, sheltered position in South Devon, and a certain clump buried more than a foot deep, so that the tips of the bulbs (usually quite 2 feet long) were just above the ground. The first case cited explains itself, whilst I cannot conscientiously recommend the course followed in the latter, for I have in my records of the *Amaryllidaceæ* a note of experiments made in a celebrated garden, in the matter of planting *Crinums* deeply as a protection from frost. The bulbs, a fine, valuable lot, were planted 1 to 2 feet deep, according to their size, and have not been seen since. The method, I believe, was originally advocated by the late Dean Herbert, who was rather successful with *Crinums*. In that case, however, it was an

bone-dust as a dressing for summer flower-beds, particularly for *Pelargoniums* and *Calceolarias*, forking it into the surface of the soil just before the plants are planted. *H. Foster, The Lodge Gardens, Doncaster.*

BOOK NOTICE.

THE CULTURE OF GREENHOUSE ORCHIDS.
By Frederick Boyle. (Chapman & Hall).

YET another work on Orchids by Mr. Frederick Boyle, and this time of a more important character, for it is designed to assist the struggling amateur. As Mr. Boyle himself puts it, he considered that there was room for a book on Orchids written "by an amateur for amateurs," and on those lines he commenced it and carried it out. But as it was intended for a serious work, expected to be reliable on all points of cultural details, the amateur did a wise thing, and submitted his copy to Mr. Joseph Godseff, the well-known manager to Messrs. Sander & Sons, of St. Albans, and hence the work has the stamp of expert authority placed on the amateur effort. The book deals only with Orchids which may be grown successfully in a cold-house. That simple fact is much in its favour, for it enables the amateur with only cool-house accommodation to get readily at the things which are suitable for his case without having to separate them from plants which require more heat than he can give, the possession of which causes more small collections where accommodation is very limited, to look and be unsatisfactory, both as regards growth and flower, than anything else. The enumeration of all species available for culture in the greenhouse is likely to do good also in another way, for it will indicate many species, such as the highland Brazilian *Oncidium*s, which should be grown cool, but which are killed in large quantities by being kept in excessive heat, especially when at rest.

The book, which has for a frontispiece a coloured plate of "*Odontoglossum crispum* Alexandræ," the *Alexandræ* accidentally placed as a varietal instead of a synonymous name, has also a plate of *Lælia anceps* *Schroderiana* and *Oncidium macranthum*, and the descriptive matter is brightened by fifty illustrations of single flowers of standard cool-house Orchids, reproduced from photographs by Col. F. C. Taylor, one of which—*Odontoglossum crispum* "Lady Jane," a remarkable form, flowered by J. Wilson Potter, Esq., of Croydon—we, by the courtesy of the Publishers, are enabled to produce (fig. 56). The bulk of the work is taken up with the enumeration of the genera and species recommended for culture in the greenhouse, together with cultural instructions, and much other information regarding each of the subjects dealt with, and the whole is successfully and entertainingly treated, much that cannot fail to be of the greatest service to the amateur being set forth in a very plain and intelligible manner.

The opening chapter, "The Nature of Orchids," deals in a familiar way with the structure and mode of growth of Orchids, and in its course touches on the question of the use of artificial manures, but without any definite conclusion or recommendation being come to or given.

The second chapter is on "The Orchid House," most useful details, instructions, and a cross-section plan of a model house being given.



FIG. 56.—*ODONTOGLOSSUM CRISPUM* "LADY JANE."

open border, but "in a sheltered and moist valley in the neighbourhood of Torquay," a further reference being made to a clump in a Cornish garden. I would like to point out that the extreme south-west of England is exceptionally mild, and that records of the behaviour of *Lilium giganteum* in that part are of little use to those living elsewhere. I venture to assert that the plant would refuse to grow at all in some parts of England, and would not thrive so well under the best possible conditions found north of the Thames as it would do south of that boundary. Wherever there are late spring frosts to be feared, *Lilium giganteum* cannot be grown without being afforded a good deal of shelter. It may grow fairly satisfactorily until the spike appears, when, should cold winds or a frost occur, followed by warm sunshine at midday, the stem will split and crack in all directions. The early morning sun will destroy any spike of *L. giganteum* in this manner, after it has passed through a cold or frosty night. "S. W. F." should remember that the climate of south-west England is moist compared with the eastern side of England, and much milder. When writing of the degrees of hardiness of plants, it is necessary to remember that there are gardens in Caithness as well as in Corn-

expert who knew his plants well, and who was guided in all that he did by that knowledge. I have planted out a great many *Crinums* for the test of hardiness in a garden near London, and I should think quite sixty bulbs of *Moorei*, but none of the latter have thriven in the open under the best possible conditions. They existed, and probably exist still, but not as creditable specimens. *Geo. B. Mallett.*

ARTIFICIAL MANURES FOR SWEET PEAS.—I am of the same opinion as Mr. Clark, that one salve does not suit every sore. I have proved that artificial manures give better results than stable-manure. For the last five years I have grown four rows (50 feet long) of Sweet Peas in different parts of the kitchen garden at this place, the soil of which is light and sandy, using stable-manure, and that of pigs, and the plants have done fairly well; but the best results were obtained from bone-dust. The ground is dug deeply in the autumn, and as soon as the weather permits in February, having taken out a drill, into which I sprinkle bone-dust rather heavily, and cover the same with soil 3 or 4 inches deep, I sow the seed. In dry weather I apply manure and scot, and Thompson's or Standen's manure. I can strongly recommend

"Orchid Names" is the heading of the next chapter, and in it the matter savours more of the popular magazine than of a book seriously intended for workers. In the course of a rambling criticism on the scientific Orchid names, the author says: "Nineteen in twenty among genera and most species bear a Greek or Latin title, qualified only by bad grammar." Patient and clever men have worked on this question for centuries, and have done their best, and to them Mr. Boyle should be thankful that he is able to indicate the plants he writes about, and wishes his readers to identify. It is common for novices in our days to think they can leap into notoriety by assailing the best that science can place before them, and that, too, without even hinting at or attempting to suggest a better method. The names are intended as a means of classifying the genera and identifying the species wherever plants are studied or cultivated, and that means is accomplished in an admirable degree by our present system of nomenclature. Botanists themselves are always ready (perhaps too ready) to correct errors whenever any fresh light is thrown on the subject, but the system as it is must remain.

In his dealing with the names at his command, too, the author is not always accurate. Taking at random *Odontoglossum* × *Andersonianum*, it is said to be named after Dr. Anderson, botanist, instead of the late Mr. Anderson, gr. to T. Dawson, Esq.; and *Cymbidium Mastersii* after Mr. Masters, editor of the *Gardeners' Chronicle*, instead of Mr. Masters, then of the Calcutta Botanic Gardens.

In the chapter on "Potting Orchids," and in other parts of the work, Mr. Boyle writes enthusiastically of the Belgian culture of Orchids in Oak-leaf mould, or *terre de bruyère*; but in the cultural instructions under each genus he wisely places the well-tried British method of potting in peat-fibre and sphagnum-moss first, and sometimes refers to the other method as an alternative.

Recent communications in the *Gardeners' Chronicle* show that the leaf-soil culture is by no means generally accepted, even in Belgium, whilst in this country it is only on its trial; and although excellent plants may be found here, grown in leaf-soil, there are not wanting growers who pronounce against it after trial. Further cautious experiments in that direction are needed. Taking the work for what its author intended it to be, viz., a plain, sufficient, and trustworthy guide for amateurs of little experience, it may be said that he has accomplished this end to a remarkable degree, most matters, to which some might take exception, having little bearing on the vital question of good culture. The average prices of many of the things are also given.

SOCIETIES.

ROYAL HORTICULTURAL.

MARCH 11.—There was a very fine show of plants and flowers in the Drill Hall, Buckingham Gate, Westminster, on Tuesday last. The display was a larger one than has been made at any meeting since the commencement of last autumn, and quite as much as the present hall can conveniently contain. Throughout the day there was very little daylight in London, whilst in the hall itself it was impossible to see the exhibits perfectly. Before 3 P.M. it was necessary to light the building with gas, but this was at best very inefficiently done.

Orchids were shown numerously, and the ORCHID COMMITTEE considered a number of novelties to be worthy of awards.

The FLORAL COMMITTEE made only one such award, and this was to a variety of *Lachenalia*, from the Glasnevin Botanic Garden. Several very fine groups

of forced flowering trees and shrubs were shown, and a number of other groups of miscellaneous description, some *Cyclamens* being of exceptional cultural merit.

The NARCISSUS COMMITTEE met, but there being so little to do, did not formally "sit," so that the Floral Committee discharged the work.

The FRUIT AND VEGETABLE COMMITTEE had not many exhibits before it, but fruits of a reputed cross between an Apple and a Pear were very interesting.

In the afternoon a Lecture was given by Mr. R. Hedger Wallace, entitled "The New Soil Science." Mr. Harry J. Veitch, who presided, announced that during the present year 100 more new Fellows have been elected than during the corresponding period of last year.

Floral Committee.

Present: W. Marshall, Esq. (Chairman); and H. B. May, Geo. Nicholson, R. Dean, J. W. Barr, G. Renthe, J. F. McLeod, W. Howe, Chas. E. Pearson, J. Fraser, Chas. Dixon, H. J. Cutbush, C. J. Salter, Chas. Jeffries, Jno. A. Nix, Chas. E. Shea, R. W. Wallace, W. P. Thomson, E. H. Jenkins, W. J. James, H. Turner, Geo. Paul, Jas. Walker, E. T. Cook, R. C. Notcutt, and H. J. Jones.

Tea Rose Lady Roberts, exhibited by Messrs. FRANK CANT & Co., Baiswick Rose Gardens, Colechester, is a reddish apricot-coloured flower, previously given an Award of Merit by the Royal Horticultural Society.

Some very fine hybrid *Lachenalias* were shown by Mr. F. W. MOORE, from the Royal Botanic Gardens, Glasnevin, Phyllis Paul, Brightness, Kathleen Paul, Brilliant, and W. E. Gumbleton, were names attached to the varieties, which were more or less yellow in colour, and of large size and substance.

Several varieties of Violets in pots and as cut flowers were shown by exhibitors, one very purple in colour, being from Lady ANCASTER, Nornanton, Stamford.

That lovely Rose, Fortune's Yellow, was shown in very great profusion by Lady WANTAGE, Lockinge Park (gr., Mr. Fyfe), from whose garden we have seen many previous exhibits of the same old Rose. In this instance the blooms were made into a great pyramidal bouquet, such as is presented by a free flowered *Rhododendron* (*Azalea*).

Clivias (*Imantophyllums*) were splendidly shown by Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, Chelsea, who had forty plants in 6-inch and 8-inch pots. Each plant bore a very strong spike of flowers, all of them of good type, and varying slightly in degree of colouring. *Loropetalum chinense* was grandly shown in small plants from the same establishment; they were in 5-inch pots, the plants being 1 foot or 1½ foot high, and very full of flower. The plant is evidently capable of becoming a good vase plant, perhaps even a "table" plant. *Rhododendron amenum* Illuminator and *Shortia galacifolia* were shown in flower from the same firm (Silver Flora Medal).

Messrs. JAS. VEITCH & SONS again exhibited plants of *Cineraria* Feltham Beauty, of rather dwarf and branching habit, the flowers being a distinct mauve colour. These plants were accompanied by another batch of a variety called *ramosa*, of taller and looser habit, with purple flowers.

Some extraordinary plants of *Cyclamen* were shown by Colonel ROGERS, Franklands, Burgess Hill, Sussex (gr., Mr. C. Murrell). The plants were in 8-inch pots, and were not only remarkable for excellent habit, but for unusual freedom of flowering, the blooms being large, and of great substance. Some of the plants were seven years or more old, and it was stated that one of the best specimens, with white flowers, had been shown in flower in November last at the Birmingham Chrysanthemum Show—an extraordinary instance of continued flowering. There were white, and mauve, and purple and crimson varieties, and from any point of view were deserving of praise. The plants came from a very small establishment (Silver Flora Medal).

Messrs. JNO. WATERER & SONS, Ltd., Bagshot, exhibited some choice varieties of Conifers in pots, the plants being almost perfect ones. Some of the forms represented were:—*Retinospora pisifera nana* variegata (excellent dwarf plant), *Cupressus versicolor*, *Juniperus virginiana aurea*, *Thuja occidentalis aurea*, *Cupressus Westermanni*, *Retinospora obtusa nana aurea*, *Retinospora filifera aurea*, *Juniperus japonica aurea*, *Buxus canadensis nova*. There were also numerous good plants of *Skimmia japonica* and *Audromeda japonica* in bloom (Bronze Banksian Medal).

Messrs. H. CANNELL & SONS, Swanley, Kent, again made a very gay exhibit of flowering plants, including a considerable batch of *Cinerarias* of a fine strain of the florists' type. *Cyclamens* were very good, and included some of the fimbriated varieties. A batch of plants of *Primula obconica* showed what an amount of

colour is now obtainable in the flowers of this species, which for hardness of constitution, and a free-flowering habit, is everything that could be wished (Silver Flora Medal).

Messrs. HUGH LOW & Co., Clapton, London, and Bush Hill Nurseries, Enfield, exhibited a pretty group of plants, containing *Acacia Drummondii*, *A. ovata*, *Cyclamens*, *Schizanthus Wisetonensis*, *Boronia megastigma*, *B. heterophylla*, &c.; Carnations, &c. Messrs. HUGH LOW & Co. also showed a corner group arranged on the floor, consisting of Palms, ranging from 6 to 10 ft. in height, healthy, and well furnished with leaves. In the front of the group stood a row of plants of *Crimson Rambler* Roses, and *Cytisus racemosus*, these being placed alternately (Silver Flora Medal).

Messrs. PAUL & SON, The Old Nurseries, Cheshunt, showed some first-class varieties of *Lachenalia*, one of the best of which was *L. aurea chrysanthia*; also some blooms of *Camellia alba plena*, plants of *Cœlogyne cristata alba*, &c. (Bronze Banksian Medal).

Seedling *Hippeastrums* from F. A. BEVAN, Esq., Trent Park, Barnet (gr., Mr. H. Parr), included some fine varieties, and were shown over a ground-work formed of varieties of *Primula stellata*.

Messrs. JNO. LAING & SONS, Forest Hill Nurseries, London, S.E., exhibited a group of choice stove and greenhouse plants.

HARDY PLANTS.

Messrs. R. WALLACE & Co., Kilnfield Gardens, Colchester, exhibited some choice hardy plants in pots. Several Irises were included, as the distinct *I. Sindjarensis*, *I. histrioides*, *I. reticulata*, *I. r. Krelagei*, and *I. Danfordie*; *Fritillaria aurea*, *Muscari azureum*, *Scilla sibirica alba*, several varieties of *Narcissus*, and of *Galanthus*, &c. (Silver Banksian Medal).

Messrs. T. S. WARE & Co., Ltd., Hale Farm Nurseries, Feltham, showed a large collection of hardy alpine and other plants in pots. *Hepatica triloba* in various colours, *Saxifraga Burseriana*, &c., in good batches, were effective. There were forced *Magnolias*, *Narcissus*, &c. (Bronze Banksian Medal).

Messrs. GEO. JACKMAN & SON, Woking Nurseries, Surrey, exhibited some hardy plants on a rockery. Amongst the numerous species in flower were *Lithospermum canescens*, a new *Fritillaria*, *F. Zagriga*, with slender growths, 3 or 4 inches high, and small brown and green flowers; *Polygala chamæbuxus purpurea*, *Primula verticillata*, *P. denticulata alba*, &c. (Silver Banksian Medal).

Messrs. BARR & SONS, King Street, Covent Garden, showed extensively various *Narcissus*, many *Hepaticas* of the small-flowered species, *Anemones*, *Helleborus*, species of hardy *Cyclamens*, *Clionodoxa*, several Irises, including *Orchidoideis*, *Bulboëdium monophyllum*. The chief features of the exhibit was the bank of named *Narcissus* blooms in good condition. A Silver-gilt Banksian Medal was awarded.

Messrs. W. CUTNISH & SON, Highgate, London, N., showed flat baskets filled with *Hepatica triloba rubra*, and the double-flowered of this variety; *H. t. cerulea*, and the double-flowered form of it; and *H. t. alba*.

Mr. ROBERT SYDENHAM, Birmingham, exhibited some *Narcissus*, *Hyacinthus*, Tulips, &c. growing in moss-fibre instead of soil. The fibre certainly suited them perfectly.

FORCED TREES AND SHRUBS.

Messrs. W. PAUL & SON, Waltham Cross Nurseries, Herts, had an exceedingly beautiful group of forced trees and shrubs, remarkable for the numerous varieties of Peach, Almond, and *Prunus* species. The double white and the double crimson Peach, also the Carnation-flowered (rich rosy-red), are very lovely. *Prunus triloba* was of capital colour, and like all the other species, was full of bloom. *Magnolia conspicua*, in several specimens; *Forsythia suspensa*, very freely bloomed, were among other good plants in the group. (Silver-gilt Flora Medal).

Messrs. R. & G. CUTHBERT, Southgate Nurseries, Middlesex, contented themselves with a smaller group of forced shrubs than was shown on the previous occasion. There were very large plants of *Rhododendron molle*, *Hortulanus Witte*, and *Isabelle Van Houtte*. Standard Lilacs of the varieties *Madame Lemoine* (double white), and *Charles X.*, also of *Viburnum Opulus*, double white and double pink Thorns, *Staphylea colehica*, &c. Among the dwarfier plants *Kalmia latifolia* was very pretty, and many varieties of Japanese *Acers* (Silver Banksian Medal).

Messrs. W. CUTNISH & SON, Highgate Nurseries, London, and Barnet, Herts, exhibited forced shrubs, in which standard trees of *Cytisus*, *Laburnum*, *Spiræa grandiflora*, double pink Thorn, Lilacs, Ribes, &c., were

included. Among the smaller plants were *Spiraea prunifolia* fl.-pl., with its little white, button-like flowers; *Staphylea colchica*, *Prunus triloba*, *Lilacs*, *Magnolia Soulangeana*, &c. (Silver Flora Medal).

AWARD OF MERIT.

Lachenalia W. E. Gumbleton.—A very fine variety, with large flowers wholly golden-yellow in colour, except in the bud state, when they are orange-red. From Mr. F. W. Moore, Royal Botanic Garden, Glasnevin.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the Chair); and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshaw, H. M. Pollett, H. Ballantine, J. Douglas, J. Cypher, F. A. Rehder, W. A. Bilney, H. T. Pitt, W. H. Young, H. J. Chapman, F. W. Ashton, W. H. White, W. Boxall, T. W. Bond, W. Thompson, H. Little, H. A. Tracy, and J. W. Potter.

Sir Trevor Lawrence, Bart., Burford (gr., Mr. W. H. White), staged an effective group, in which the plants were splendidly grown, and profusely flowered throughout. The principal feature was the fine *Dendrobium*s, among which were two forms of the pretty *D. x burfordense*, the large and showy *D. x melanodiscus* Rainbow, *D. x Rolfeae*, *D. x Cybele*, *D. x Dominianum*, a charming specimen of *D. barbatulum*, with over thirty fine spikes of white flowers; the rare bluish-white *D. superbum* Burkei, *D. nobile* Ballianum, *D. x speciosio-Kingianum*, with many spikes; the bright yellow *Sophro-Lælia x Marriottiana* flavescens, *Masdevallia x Hinksiana*, *M. Jeontoglossa*, *M. triangularis*, and the pretty orange-coloured *M. x xanthino-Veitchiana* (Silver Flora Medal).

Messrs. Jas. Veitch & Sons, Chelsea, were awarded a Silver Flora Medal for a remarkable group, mainly consisting of rare hybrids, which, though fine, were eclipsed by the central plant, *Lælia x Digbyano-purpurata* Edward VII. (see Awards); with it were two others from the same batch, but with smaller whiter flowers, tinged and veined with rosy-lilac; sprays of the brilliant scarlet form of *Epidendrum x O'Brienianum*, *Lælio-Cattleya x Antimachus* Cænea, L.-C. x *Pallas*, varieties of L.-C. x *Myra*, with yellow flowers; *Cypripedium x Euryades* splendens, a magnificent and richly-coloured variety, far the best of its class; *C. x Leonidas*, *C. x eximium*, various *Dendrobium*s, &c.

Frank A. Rehder, Esq., Gipsy Hill (gr., Mr. Norris), was awarded a Silver Flora Medal for a neatly arranged group of *Dendrobium*s. The varieties of *D. nobile* ranged from the pure white *D. n. album* to the richly-coloured forms of the nobilium class. Of the hybrids the best was *D. x Magda* (nobile nobilium x *melanodiscus*), a grand flower, with the rich purple colouring of *D. nobile nobilium*, and the broad petals and fine substance of the other parent. Also very distinct were *D. x socius nobilior*, *D. x Sibyl*, *D. x splendidissimum* grandiflorum, *D. x xanthocentrum*, and other hybrids.

Messrs. F. Sander & Sons, St. Albans, were awarded a Silver Flora Medal for a very effective group, principally of varieties of *Phaius x Normani*, *P. x Marthæ*, and other hybrid *Phaius*, among which there was remarkable variation in colour. With them were good specimens of *Cymbidium eburneum*, *Lælio-Cattleya x Lucia superba* (C. Mendeli x L. cinnabarina), with clear yellow sepals and petals, and a crimson front and edges of the side lobes of the lip; and L.-C. x *Edwardi* (L. cinnabarina x C. Hardiana), with bronzy-orange flowers, the sepals and petals veined and tinged with dark red; the lip ruby-crimson.

G. Singer, Esq., Coundon Court, Coventry (gr., Mr. J. Collier), showed *Cattleya Trianaei* Coundonense, a very remarkable, broad-petalled variety of a uniform purplish-rose tint, the large disc of the lip orange, and the front ruby-crimson; C. T. Cassandra, a bluish-white flower, with purple front to the lip; C. T. alba Coundon Court variety, a fine pure white; C. T. Theodora, a very finely-shaped, light variety; *Cypripedium x Olivia*, *Phalænopsis intermedia* Portei, *P. i. Brymeri*, and *P. x Lady Rothschild*.

Mr. Jas. Cypher, Cheltenham, was accorded a Silver Flora Medal for a very fine group of magnificently-grown *Dendrobium*s, comprising *D. x Ainsworthi* Cypher's variety, *D. x Aspasia*, *D. x rubens* magnificum, *D. nobile nobilium*, *D. n. Statterianum*, *D. n. Fisheri*, *D. n. Murrianum*, and other *Dendrobium*s; a fine *Lælia Jongheana*, good *Odontoglossum Hallii*, varieties of *Cattleya Trianaei*, and hybrid *Cypripedium*s.

Messrs. Stanley, Ashton & Co., Southgate, staged an effective group, containing a great variety of species and hybrids. The centre was a fine *Cymbidium Lowianum*, with a large specimen of *C. x eburneo-Lowianum* on each side. With them were a good selection of varieties of *Lycaste Skinneri*, including the pure white

form; *Lælia harpophylla*, L. flava, *Odontoglossum*, *Cochlidoda Noezliana*; various *Dendrobium*s, including the pretty *D. x Ainsworthi*, *Osidge* variety, and *D. x Vannerianum*, &c.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood), showed *Odontoglossum Hallii* leucoglossum, "Rosslyn variety," with large and finely-marked flowers; *O. x loochristyense*, Rosslyn variety, a very fine canary-yellow, handsomely-blotched flower, and a pretty form of *O. x asperum*.

Jeremiah Colman, Esq., Gattton Park (gr., Mr. W. P. Bound), sent *Dendrobium x Wiganiaum* Gattton Park variety.

Baron Sir H. Schroder, The Dell, Egham (gr., Mr. Ballantine), showed *Odontoglossum crispum* Truffautianum, a fine form with white flowers bearing irregular clusters of red-brown blotches on the middle of each of the segments.

A. Warrington, Esq., Vine House, Haslingden, showed the handsomely-blotched *Odontoglossum crispum* Lindeni.

J. Ebner, Esq., Beckenham (gr., Mr. Scutcher), sent *Odontoglossum mirandum*, *Cypripedium villosum*, and a distinct hybrid between *C. x Lathamianum* and *C. villosum*.

Mrs. Haywood, Woodhatch, Reigate (gr., Mr. C. J. Salter), showed *Dendrobium x Aspasia superbum*, and *D. x splendidissimum* grandiflorum Mrs. Haywood, both good floriferous hybrids.

F. Wellesley, Esq., Westfield, Woking (gr., Mr. Gilbert), showed *Lælio-Cattleya x Gattoiana* Westfield variety, a very distinct flower, with pale buff sepals, and petals veined and tinged with light purple, and a rich purple labellum.

Messrs. Hugh Low & Co. showed *Lælio-Cattleya x Lucasiana*.

Fred Hardy, Esq. (gr., Mr. T. Stafford), sent flowers of three singular but not showy hybrid *Cypripedium*s.

Awards.

FIRST-CLASS CERTIFICATE.

Lælia x Digbyano-purpurata "Edward VII." from Messrs. Jas. Veitch & Sons, Chelsea.—One of the most remarkable hybrids yet raised. The first of the parentage was flowered by Messrs. Jas. Veitch & Sons in 1898, but gave no promise of such a remarkable development as that seen in the present variety, "Edward VII." The labellum constitutes the greater part of the flower, the sepals and petals, which are white veined with rose, being gracefully arranged round it, contributing to the effectiveness of the labellum, which forms the chief attraction. The lip has much of the form of that of *Lælia Digbyana*, but is expanded and enlarged in a very remarkable degree. The base is of a primrose-yellow tint, in front of which is a white band, from which radiates rose-purple veining, extending into the rose-tinted front, which generally gets lighter in hue until at the beautifully fringed margin it is nearly white. Progression seems to have carried this remarkable hybrid almost out of touch with the others of its parentage.

AWARD OF MERIT.

Lælio-Cattleya x purpurata-Schilleriana Whateley.—From H. Whateley, Esq., Priory Lawn, Kenilworth (gr., Mr. Cook). A pretty hybrid, approaching nearest to *Cattleya Schilleriana*. The sepals and petals are tinged with light purple; lip front glowing ruby, disc yellow, with some dark lines, side lobes white with purple veining.

Dendrobium x Apollo album (nobile pulcherrimum x *splendidissimum* grandiflorum).—A very beautiful variety, with large, finely-formed, white flowers, with dark claret-purple disc to the lip.

BOTANICAL CERTIFICATE.

Masdevallia minuta, Lindl., from R. I. Measures, Esq., Camberwell (gr., Mr. H. J. Chapman).—A singular tufted dwarf species, with numerous white flowers from Guiana.

CULTURAL COMMENDATION.

To Mr. Stevens, gr. to W. Thompson, Esq., Walton Grange, for a fine specimen of *Odontoglossum pulchellum* majus, with sixteen spikes.

To Mr. Scutcher, gr. to J. Ebner, Esq., for *Odontoglossum mirandum*, Rehb. f.

Fruit and Vegetable Committee.

Present: Joseph Cheal, Esq., in the Chair; and Messrs. W. Bates, S. Mortimer, A. Dean, H. J. Wright, E. Beckett, W. Fyfe, H. Markham, J. Willard, Jas. H. Veitch, W. H. Divers, W. Poupard, M. Gleeson, and G. T. Miles.

Mr. Will Tayler, Osborn Nursery, Hampton, Middlesex, exhibited eighteen dishes of very well preserved Apples. Particularly good were Northern

Greening, Newton Wonder, Annie Elizabeth, Cox's Orange Pippin, Claygate Pearmain, and Blenheim Orange Pippin. Uvedale St. Germain Pear was shown well (Silver Knightian Medal).

From Lord Wantage's garden at Lockinge (gr., Mr. Fyfe), came some big Onions, including such varieties as Alls Craig, Cranston's Excelsior, Aristocrat, &c. (Silver Banksian Medal).

From the Duke of Rutland's garden at Belvoir, near Grantham (gr., Mr. W. H. Divers), were shown fruits of Apples Court Pendu Plat, and Scarlet Nonpareil; and Pear Ne Plus Meuris, all of them good.

Dr. B. Addy, Pembury Court, Kent, exhibited fruits of a reputed cross between an Apple and a Pear. The fruits were more or less Pear-shaped, but the flesh and flavour were those of an Apple. The wood and foliage of the tree were described as resembling a Pear-tree. It would be interesting to learn more of the circumstances.

The Lecture.

The lecture delivered by Mr. R. Hedger Wallace was, as far as we could hear it, an excellent summary of what is known of the action of bacteria in the soil. The conditions in the Drill Hall are so bad, and so little is done to improve them, or to add to the convenience either of the lecturer or of the audience, that we must await the publication of Mr. Wallace's paper in the *Journal* till we can do justice to it. The soil science, as the lecturer said, is in its infancy, but we know enough to realise that under ordinary conditions the soil teems with organisms of the minutest size, whose business it is, on the one hand, to break up the constituents of the soil into their component elements, and thus render them available in the nutrition of the plant; or, on the other, to effect the combination of elements and build up, rather than destroy. In either case, complex chemical and fermentative changes ensue, the nature of which is not yet fully determined. Most of these creatures are influenced unfavourably by light, but thrive in darkness, moisture, and a sufficiency of heat. To many of them air (oxygen) is essential, others thrive in the absence of that element. In the case of Leguminosæ, the bacteria or bacterioid bodies which are found in the little knobs on the root are able to supply a sufficiency of nitrogen which reduces (but does not annul) the necessity for the application of nitrogenous manures. The knobs themselves are supposed to be caused as a consequence of the irritation set up by the bacteria. It had been thought that by inoculating the soil with bacteria increased crops would result, and a substance known as nitrigen, and consisting of bacteria, had been used for this purpose, but the results at present were not satisfactory. That the Fellows will look forward to the publication of Mr. Wallace's lecture with great interest was testified by the brisk discussion that ensued.

KINGSTON CHRYSANTHEMUM.

MARCH 4.—The annual meeting was held on the above date, there being only a moderate attendance. The chair was occupied by Mr. W. J. Wells.

Mr. Hayward, secretary, presented a statement of accounts, which showed that the receipts for the year from all sources were £152 16s. 9d., and the expenses £170 1s. 9d., leaving an adverse balance of £17 5s., which was greatly due to the very bad weather on the days of the Society's show last year.

After discussion, it was decided to hold the next show on November 12 and 13, at St. James's Hall.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

ANNUAL MEETING.

MARCH 10.—The annual meeting was held under the presidency of Mr. Herbert J. Cutbush, at the offices of the Society, Caledonian Hotel, Adelphi Terrace Strand, W.C. The report for the past year was unanimously adopted, and it was decided to print 3,000 copies of same for distribution amongst the members and others. A perusal of the report shows a continued increase in membership—eighty-three new members having been elected during the year, whilst two only had died—the total membership is now over 900. Over £300 has been distributed in sick pay during the same period, whilst members, aged and otherwise, had been assisted to the amount of £107. The Convalescent Fund had not been drawn upon to a great extent. This fund is not sufficiently known we think to the members. Its object is to assist them by a change of air during convalescence. The entire working expenses, including the secretary's salary, printing, postages, auditor's fees, &c., amount to £143—being about 3s. 6d. per member. The treasurer reported having invested £1,600 during the year—the largest amount ever set

aside in an equal time. The total invested funds now stand at £19,000, with a balance in the treasurer's hands of £86 14s. 1d. The liabilities to members amount to £18,887 7s. 10d., leaving a balance of £199 6s. 3d. over and above all liabilities.

Mr. Cutbush strongly advocated the claims the Society has upon the whole body of gardeners, especially the younger ones now starting into life. In a concise and clear manner he laid the Society's benefits before the members, and urged them to renewed efforts to further extend its usefulness.

Thanks to the retiring members of the committee, who were again elected; to the secretary, who was also re-elected; to the trustees and treasurer, were all unanimously passed. As treasurer, Mr. Hudson has held office for twenty years consecutively, having invested in that time £16,593 in Trustees' Stocks for the sum of £17,011.

As showing the interest the officers and committee take in the business affairs of the Society it was stated that out of a possible attendance of fifteen, the average attendance was eleven. For reports and rules our readers are referred to the secretary, Mr. W. Collins, 9, Martindale Road, Balham, S.W.

TRADE NOTICE.

MR. FRED. SMITH, for the past three years gardener to Sir Shirley H. Salt, Bart., Crikhowell, has taken over the glasshouses and kitchen gardens at Waltham Grove, near Grimsby, where he will commence business as a fruiterer and florist.

Obituary.

JAMES TEGG.—The death, at the age of seventy years, of Mr. J. Tegg, who up to recently was head gardener and forester at Bearwood, Wokingham, is announced as having occurred on the 5th inst. Some two years or so ago, Mr. Tegg retired through ill-health, and resided at Wokingham, near the scene of the principal work of his life. Death came somewhat suddenly through heart failure, and he was buried in Bearwood churchyard, which is on the estate. He leaves a widow and grown-up family.

James Tegg was born at Midgham, in South Berkshire, on March 29, 1832, and began his gardening career in the then well-known nursery of Mr. Henry Groom, at Clapham Rise, Surrey. From thence he went to Driffield, in Yorkshire, and filled the position of foreman in a private garden. From thence he came south, and was next found as foreman at Messrs. Maudsley & Sons, at Norwood; and from there joined his father, who was then gardener at Dover House, Rochester, as his foreman. Then came the opportunity of his life—his appointment as head gardener to Baron Hambro', at Roehampton, where he soon became known as a successful cultivator and exhibitor of fruit at the exhibitions of the Royal Botanic Society in the Regent's Park, the Crystal Palace, and elsewhere, Grapes and Melons especially being staged by him. Here he remained for ten and a-half years, when he went to Clumber, Worksop, Notts, as head gardener to the late Duke of Newcastle, and while there he was an exhibitor in several classes at the International Horticultural Exhibition held at South Kensington in May, 1866. He remained at Clumber five years, and then came south to take charge of the gardens and woods of Bearwood, the estate of Mr. Walter—a post that he filled for the space of thirty-one years; and while here he carried out several extensive alterations and improvements, including the planting of the Wellingtonia avenue, the formation of a new kitchen-garden, an extensive rock-garden, &c. The building of the palatial mansion some years ago afforded an opportunity for extending the pleasure-grounds, and in subsequent years other improvements were made. Mr. Tegg always took a strong personal interest in his work. He was a man of remarkable energy and activity, and kept the gardens and houses in excellent order. One incident in his career was occasionally mentioned by him. He made up the first bouquet presented to her present Majesty the Queen, when as Princess Alexandra of Denmark she first came to England in 1863. The bouquet was made by order of Baron Hambro', and was presented to the Princess by the Danish Ambassador. R. D.

ANSWERS TO CORRESPONDENTS.

ASPIDISTRA: A. B. The present month is a good time for subdividing the plants. When this is done, the plants sooner recover when afforded bottom-heat of 75° to 80° in a frame for a month or two. Use a loamy soil, and good but not over-abundant drainage.

CATERPILLARS FOUND AMONG CABBAGES: J. S. At the stage of the grub sent it is very difficult to say for certain what the species is. It is not peculiar to Cabbages, and you had better feed some of them on the leaves and stems of Cabbages; allow them to pass through the chrysalis stage and form the perfect insect, and send that to us.

DAFFODIL SIR WATKIN: H. & B. St. Martin. The striping or deep channelling of the leaves is due to some sort of check to growth. The plants will doubtless grow out of it as the weather gets warmer.

GARDENING IN INDIA: Correspondent. In reply to your question, we would say that *Gardening in India*, by G. Marshall Woodrow, is the most suitable book for your purpose. The publishers are: Bombay, Thacker & Co., Ltd.; Calcutta, Thacker, Spink & Co.; Madras, Higginbotham & Co.

GARDENER'S HOUSE AND THE PAROCHIAL RATES: An Old Subscriber. If the house you occupy rent free is not on the home estate of the employer, but is a separate tenement, you must pay the rate, and make the best terms you can with him.

LANDSCAPE WORK, DRAWING, DESIGNING, &c.: A. B. C. Obtain Mr. H. E. Milner's *Landscape Gardening*.

LEAF-MINERS IN MARGUERITES: Maggot. Insecticides are of no avail. You must pinch the grubs under the thumb-nail when there are but few of them, or cut off the leaves and burn them if too numerous to destroy by the first method. When the insect is on the wing, the deposition of eggs may be prevented by the use of quassia-water. The same fly infests Chrysanthemums, Cinerarias, Senecios, &c.

NAMES OF FRUITS: C. P. Beauty of Kent.—J. H. 1, Normead Pearmain; 2, a small example of Hambleton Deux Ans.—*Colocynth*. Flanders Pippin.—W. D. 1, Cox's Orange Pippin; 2, Sturmer Pippin; 3, Christmas Pearmain.—G. R. A handsome form of Beauty of Kent.—D. C. H. 1, probably a local variety; 2, we believe this to be the true Melrose.—G. H. 1, Warner's King; 2, Cobham.—H. J. 1, Golden Reinette; 2, somewhat resembles Cluster Golden Pippin, hence, perhaps, it has obtained the local name of Cluster; this, with 3 and 6, are, no doubt, of local origin; 4, Fenouillet Jaune; 5, Norfolk Stone Pippin; 6, is not the true Ten Shillings, an old Apple, but resembles it in some points, and has thus probably been named locally.

NAMES OF PLANTS: C. S. You send three very small sprays of some Junipers without numbers by which we can identify the specimens. Please send better specimens properly numbered.—J. F. Brassavola glauca, Lindl., now generally called *Laelia glauca*. It generally has some slight purple markings at the base of the lip. See *Gardeners' Chronicle*, 1890, vol. vii., p. 356.—T. H. O. P. Cattleya Trianaei, a fairly good variety.—W. J. R. 1, Todea superba, a filmy Fern; 2, Adiantum cuneatum mundulum; 3, Polypodium aureum; 4, Adiantum hispidulum; 5, Platylema flexuosum, sometimes called *Pteris flexuosa*; 6, *Daphne Mezereum*.—J. C. B. 1, Cattleya Trianaei delicata; 2, Cattleya labiata, flowering late.—C. R. S. *Laelia Jongheana*, now rather plentiful, but very rare a few years ago.—D. E. T. 1, *Diosma* species, send in flower; 2, *Diosma ericoides*; 3, *Diosma capitata*; 4, send in flower—possibly a Privet; 5, *Polygala oppositifolia*; 6, *Polygala cordata*; 7, *Acacia pulchella*; 8, *Acacia eultriformis*. Please send better specimens in future, most of these are

without flowers.—W. P. *Dendrobium nobile* album.—A. B. 1, *Acalypha Macleania*; 2, *Acacia longifolia*; 3, *Acacia cyanophylla*, so far as we can judge by the specimens sent.—J. W., Coventry. A very fine variety of *Dendrobium nobile*, but without sufficient distinctness to warrant a special name.—R. E. The small African Orchid is *Eulophia tristis*; the fleshy flower *Stauroopsis gigantea*, more often called *Vanda gigantea*; the *Dendrobium nobile* is a very fine variety.—E. R. 1, *Habrothamnus*, or *Cestrum fasciculatum*; 2, *Cotyledon* sp., send when in flower; 3, *Abies Pinsapo*.—G. H. P. *Lonicera fragrantissima*.—Rosa. *Griselinia littoralis*, nat. order Cornaceae.—E. C. L. Leaves insufficient, send when in flower. Sent with an Apple, but No Name. 2, *Grevillea rosmarinifolia*; 3, *Diplopappus chrysophyllus*; 4, *Cupressus lusitanica*, probably; 5, *Cupressus*, perhaps *Goweniana*, but we cannot tell without cones; 6, *Veronica Traversii*.

NOTICE TO LEAVE EMPLOYMENT: D. Kimber. If you lose wages from being late in the morning, you do no work in the first quarter of the day, so that there is really no cause of complaint on your side, but rather on that of the employer. If oft repeated it might afford a reasonable cause for discharging you at a moment's notice. If you are a day labourer, no notice is required by an employer. If living in a bothy, a month or a week's notice is customarily required and given.

NOTICE TO QUIT SERVICE: A. A., Kent. Under the circumstances related, you are, as a gardener engaged at a yearly salary, entitled to at the least one month's notice, or in lieu thereof, payment in full for that length of time.

NURSERY: D. K. L. As you possess only an acre of land, and must transplant the young stuff after it has remained in the seed-beds two years, a very few pounds of Larch, Spruce, and Scots Pine will suffice—say 10 lb. of the larger and heavier seeds, and proportionately less of the small, light seeds. Prepare now beds 4 feet wide and of any desired length, by dressing them with leaf-mould or quite decayed stable-manure, and digging the soil deeply, but not necessarily trenching it; trample the soil firmly, rake it to a fine tilth, scatter the seed thinly broadcast, cover with soil out of the alleys from a quarter to half an inch deep, and roll lightly.

PELARGONIUM: J. C. The disfigurement upon the leaves of the variety *Raspail* is probably due to drip or damp. Afford more ventilation, and maintain as buoyant and pure air as possible.

PRIMULA OBCONICA: F. R. H. S. A few years ago the flowers you send would have been novel; but there have been many seedlings raised recently that produce blooms quite as large, and of equal colour to yours. Some very remarkable plants shown at the Drill Hall are referred to on p. 182.

STRAWBERRY PLANTS FAILING: Worcester. The plants have the appearance of having had the top growth forced up by a high temperature much in advance of any action at the root. The forcing needs to be very gentle in the early stages, and, if possible, bottom-heat should be applied by sinking the pots partly or wholly in a leaf-bed, and at the same time keeping the tops cool and ventilated.

COMMUNICATIONS RECEIVED.—Conway G. Warne.—C. B.—R. H. S.—F. T. N.—Harrison Weir.—A. C. B.—A. H. K.—Ed. André, Paris, with many thanks.—J. M. D. & Co.—R. W. R., with many thanks.—A. G.—Hou. J. B.—F. W. O.—N. R. F.—J. W.—Dr. W. S. Breslau.—Dinter, German S. W. Africa.—F. L. W.—Dicksons.—W. H. S.—K. & Sons.—J. M. Bath (with thanks).—T. Foster.—E. C.—B. Ashton.—J. M.—G. B. R.—J. W. M.—J. D.—A. J. L.—W. P. B.—J. P. Sydney.—J. W.—T.—E. S.—J. J.—Gardener.—Onoid.—Cedo Nulli.—T. F.

PHOTOGRAPHS RECEIVED, WITH THANKS.—J. T.—A. D. Stevenage.

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



WINTER VIEW IN VICTORIA PARK, BATH.





THE

Gardeners' Chronicle

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VEGETABLE PRODUCTS IN MINCING LANE.

AT this time of year, when the British public generally is more or less interesting itself in the Chancellor of the Exchequer's Budget, our thoughts run over a wide range of commercial products, or likely sources of taxation that may possibly suggest themselves to the resourceful and fertile mind of the Chancellor, and that will not press too heavily on any class of the community in particular. In doing this we cannot help being struck with the prominent part the vegetable kingdom plays in the realisation of revenue. A glance even at the Customs Tariff of the United Kingdom which, of course, is a list of those articles which are already liable to duty, proves the truth of this statement, not only with regard to the number of vegetable products in comparison with those from other sources, but also to the absence of many other well-known substances of equal or even more importance, and which would probably yield large sums were a slight duty chargeable. Tobacco, Tea, and Sugar are, as everybody knows, fruitful sources of revenue which, though the rates upon each may be varied, will, like the income tax, probably never be surrendered. Probably, however, there are comparatively

few people who have any idea of the important position fruits and flowers under different forms hold in the Customs tariff, and the unequal manner under which they are taxed; thus, while dried Currants pay only two shillings per cwt., Raisins are charged seven shillings—very unequal rates for two varieties of the Grape, the presence or absence of “stones” or seeds in the fruit apparently making all the difference, and yet not entirely so, for the Sultana (a stoneless Grape) is classified as a Raisin, while some of the very large Currants now often seen in the market are sometimes a puzzle even to the Customs authorities, who have to decide whether they should be classified as Currants or Raisins. Figs and Fig-cake, Plums and Prunes, are chargeable with the same rate as Raisins; while canned and bottled fruits preserved in thin syrup pay one shilling per cwt., the same preserved in thick syrup have to pay two shillings more, or three shillings per cwt. Crystallised fruits are distinguished from others by a higher rate, namely 4s. 2d. per cwt. Ginger preserved in syrup or sugar is charged three shillings per cwt., while preserved Tamarinds pay only one shilling.

Flowers occur in the Customs tariff in one form only, and this not in a fresh or dried state, but in the condition of sweetmeat, namely, the crystallised flowers of the Violet, Rose, Orange, and which are charged at the same rate as crystallised fruits, namely, 4s. 2d. per cwt.

If the Chancellor of the Exchequer were to take a walk through the several brokers' show-rooms in Mincing Lane, he would, no doubt, become imbued with new ideas of taxation: at any rate, a glance down the reports of the London markets in that busy corner of the great city is a lesson of much interest and great educational value, for it is chiefly in these reports that we first find references to products new to commerce—things that are sent into market at first in small quantities to test their suitability as marketable articles, and their prospect of finding purchasers. Products of this kind of any real value seldom make their way with any flourish of trumpets, but become quietly established, the demand increasing as their properties become known.

The case is, perhaps, rather different with regard to medicinal products, any new discovery in this direction has of late years been made the cause of many much-advertised quack medicines, though some of them have proved of value, and have found a place in the *Pharmacopœia*, such as Coca (*Erythroxylon coca*), and Cascara sagrada (*Rhamnus Purshiana*), and others. In the Mincing Lane classification of products, it is sometimes difficult to find any special article; for instance, one unacquainted with the ways of product brokers, would scarcely expect to find Chillies classed with spices, but in such company they are always placed, though the principal use of the Chilly is as a condiment, either for making cayenne pepper or for mixing with pickles. Very large quantities of these pungent fruits now come into English commerce, and it is said that the increased demand is to some extent due to the use of much larger quantities than has hitherto been the case in the West of England pickle preserving trade: though there is also a fairly good demand for them in medicine.

The geographical range of commercial Chillies has of late years become much wider than formerly, for besides the regular source from India, we receive Chillies of good quality and very bright appearance from Nyassaland, Sierra Leone, and Zanzibar; and more recently from Japan. The botanical source of the African Chillies is attributed to *Capsicum minimum*, and though the general appearance of the Japanese form is very similar, it is usually somewhat larger, and has less pungency; and it has been suggested that it may be a small form of *C. annum*. The market value of Chillies varies from 38s. per cwt. for ordinary mixed Zanzibar, to 52s. for good red Nyassaland fruits, but these prices are affected by the ebb and flow of supply and demand.

Speaking of spices, one would rather expect to find Vanilla under this head, but so important is this valuable product in the Mincing Lane trade, that it is not only placed under a separate heading in the market reports, but the samples themselves are always shown in a separate show-room, and indeed in a distinct building.

The extension of the cultivation of Vanilla, not only in new plantations, but also in entirely new countries, is sufficient proof of its constant demand, and of its value as a profitable crop; and this notwithstanding the continued manufacture and use of artificial vanilline. The following facts on the present condition of the trade in Vanilla are gathered from our well-informed contemporary the *Chemist and Druggist*, who, in reporting on the Vanilla sales at the end of last month, say that the supply brought forward was the heaviest on record, and attracted a much larger attendance of buyers than usual. There was, however, a good demand, and practically the whole quantity offered, about 2,800 tons, was sold. Long lengths being scarce brought good prices, while medium lengths also sold well, pods from 8 to 8½ inches long, and of good chocolate colour, fetched 22s. 6d. per lb.; 7½ to 8 inches, 19s. 6d. to 21s. 6d.; and so on in proportion, for it must be remembered that Vanilla-pods are classified in the market and valued according to their lengths, plumpness, and colour. Thus, at the same sale the lowest grade of dry, brown pods realised only from 4s. to 11s. 6d. per lb.

Referring to the condition and prospects of Vanilla cultivation in the Seychelles, Messrs. Brookes & Green, the well-known brokers, state that the Seychelles crop for 1901 shipped from August to December totalled fully double the heaviest quantity exported from the island in any previous season, it being estimated at about 80 tons. The feature of this season's supply of Vanilla from Seychelles is the unprecedented large proportion of short beans. Medium to good size quality measure from 6 to 8 inches, but the consignments landed in London during the past three months have contained about 75 per cent. of very short beans, ranging from 3 to 5 inches. The result has been that whilst long-length quality has fairly maintained previous values, the short measurements show a reduction of about 50 per cent. To obtain good plump pods, it is incumbent for planters to see that early in the season the young shoots are thinned by picking out a quantity of surplus sprouts; in the present

case it would seem as though nearly all had been allowed to grow. This view is somewhat confirmed by recent reports from Seychelles, which advise that the flowering for the next crop is small—possibly due to the weakening of the vines last year;

ment, it may be stated that in November last one shipment from the Seychelles amounted to 21,267 kilos, of which 12,386 kilos went to Marseilles, and 8,881 kilos to London. The exports from Tahiti during 1900 amounted to 162,636 lb., of the value of

NEW OR NOTEWORTHY PLANTS.

ARISTOLOCHIA ARBOREA.

In the catalogue of M. Linden issued in 1858, this plant is mentioned as having been found in the forests of Chiapas, New Granada,



FIG. 57.—FRUIT AND SEED OF *ARISTOLOCHIA ARBOREA* FROM BOTANIC GARDEN, BATH. (SEE P. 187.)

indeed, some of the older plants are reported as seriously exhausted—a very natural result if the above surmise is true.

The warning here given, though not expressed in gardening terms, will be understood by those who cultivate the plant for profit, and who will, no doubt, benefit by the hints.

As an illustration of the quantity of Vanilla sometimes shipped in one consign-

£32,132—no small sum to be added to the finances of the island.

Chillies and Vanilla, to which we have referred, are only two items in the immense returns that flow into and are distributed from the great city markets included under the generic name of Mincing Lane. At another time I hope to refer to other products of equal value and interest. *John R. Jackson, Lympstone, Devon.*

by M. Ghiesbreght. Linden, it appears, sent it to Kew, where it flowered, and was figured and described by Sir William Hooker in the *Botanical Magazine* (1862), t. 5295. Since that time, so far as we can find, nothing has been heard of the plant till Captain Donnell Smith, of Baltimore, forwarded us specimens of an *Aristolochia* gathered by Herr von Turekheim in Guatemala at an altitude of 350 metres. On examination of the flower we had no difficulty

in at once referring the plant to the *A. arborea* of Linden. The plant is highly curious, as like its congener, *A. maxima*, it is not a climber, but a low, branching shrub, with numerous erect, slender branches, long, lan-

beneath the surface of the ground, about 2 inches in diameter, of a rich brown colour, the outer part of the corolla [perianth] on the lower end 3-lobed, middle lobe white (the white even extending over the side lobes), but the

junction between the distended tube and the expanded limb. This stalk is surmounted by a thick, oblong, cushion-like, fleshy cap, about 1 cent. in its longest diameter, aptly compared by von Turekheim to the pileus of a fungus.

The column placed, as usual, at the extreme base of the tube immediately above the ovary, is oblong, with a sub-orbicular, 2-lobed disc, differing from the ordinary 6-lobed style of most *Aristolochias*, but resembling that in the genus *Holostylis*. The flowers of *Aristolochias* have in many cases a fold or tube emerging from the throat of the perianth, and pointing downwards as if to facilitate the ingress of insects, and perhaps to obstruct their egress when once they have gained admission. This arrangement, like the curious process of *A. arborea*, is doubtless connected in some way with the fertilisation of the flower, but it would be rash to say in what way till we had the opportunity of seeing the insect, if insect it be, at work. We must have examined many scores of dried *Aristolochia* flowers, and many living ones, but we scarcely remember to have seen an insect in them on any occasion. Maxwell T. Masters.

HORSE-CHESTNUTS.

ÆSCULUS AND PAVIA.—Among trees of large size that are hardy in this country, the common Horse-Chestnut (*Æ. Hippocastanum*) is by far the most ornamental as regards its flowers. No tree that we can grow equals it in its combined grandeur of aspect and beauty as a flowering tree. There are, besides this, seven other species in cultivation, but none of these, in this country at any rate, is more than medium-sized, and two of them are usually of a shrubby character. All the species of *Æsculus* are noteworthy for their beauty of foliage, standing perhaps pre-eminently in this respect as a genus of hardy trees. It should be mentioned that "*Æsculus*," as now interpreted, includes what were formerly known as "*Pavias*." The *Pavias* were distinguished from *Æsculus* by their smooth fruits and four-petalled corollas; the true *Æsculus* having spiny fruits and five petals in the corolla. The discovery, however, of species in which these distinctions broke down caused the merging of the two groups under *Æsculus*.

All the species are gross feeders, and like a rich, moist soil. The greedy, far-reaching roots of the common Horse-Chestnut make it difficult to grow any choice plants near it. It is, in fact, only suitable for large gardens or parks.

The best method of propagating these trees is by seed, which should be sown as soon as ripe. Some of the varieties of garden origin have, of course, to be "worked," but it is unfortunate that the stock oftenest used for the smaller-growing ones should be the Horse-Chestnut. Its vigour and rapid growth make it quite unsuitable for them, and grotesque specimens, with the stock thrice the thickness of the scion, are frequently the result of using it. Seedlings of the species to which the variety belongs should, if possible, be used as stocks.

Æ. CALIFORNICA.

This tree, one of the rarest of the Horse-Chestnuts, is a native of the western slopes of the mountains of California. It has a low, rather spreading habit, and at its largest is only from 30 feet to 40 feet high; oftener it is a shrub one-third as high. In the southern parts of England, even at Kew, it is perfectly hardy, and it flowered in Messrs. Veitch's nursery at Exeter as long ago as 1858. During the summer of 1901 it flowered and fruited at



FIG. 58.—*ÆSCULUS TURBINATA* (= *Æ. CHINENSIS*, HORT.).

(SEE P. 188.)

ceolate leaves, and curious flowers emitted from the corky stem near the base.

The main peculiarity of the flower we shall allude to immediately, but in the meantime we may quote M. von Turekheim's description from the living plant. "A little tree or shrub about 8 to 10 feet high, with very rough bark [and], long, lanceolate leaves; flowers coming out on the main trunk in clusters, even from

most queer thing is that the place where the outer corolla goes into the tube is closed by a spongy excrescence of the shape of a fungus whose stalk is white, while the hat [pileus] is of the same dark brown as the corolla."

The coloration is not perceptible in the dried flowers, but the fungus-like excrescence is easily detected. Its broad, cylindrical stalk emerges from the throat of the perianth at the

the Bath Botanic Gardens, under the charge of Mr. J. Milburn, from whose specimen the accompanying illustration (fig. 57, p. 186) was made. Sargent describes it as the most beautiful of all the American species in its numerous flowers, which are borne on erect racemes, 6 inches or more long, and are white tinted with rose in colour. The leaflets vary in number from four to seven, but are usually five in each leaf, and are narrower and smaller than in the other species. Perhaps the climate of southern England may scarcely be sunny enough to suit the Californian Horse-Chestnut, but judging by its success at Bath, it seems deserving of more frequent trial.

Æ. CARNEA.

Nothing certain appears to be known of the origin of this Horse-Chestnut, but it is assumed to be a cross between the common Horse-Chestnut and *Æ. Pavia*. Its convenient size (25 feet to 30 feet in height) makes it a popular tree in gardens, and it is now almost as well known as *Æ. Hippocastanum*. It is the best of all the Chestnuts, with brightly coloured flowers, some of its improved forms—the best of which is called *Briotii*—being of a rich, deep red. Its neat, rounded habit makes it as well adapted for small gardens as the common Horse-Chestnut is for parks and avenues. It ripens seeds, and improved forms can be raised from them.

Æ. FLAVA.

None of the American species of *Æsculus* seems capable of attaining to great dimensions in this country, but this, the "Sweet Buckeye" of the United States, is the largest. It is described as often 90 feet high, growing wild on the slopes of the mountains of Carolina and Tennessee, but the finest specimen I have seen in Britain has been little more than one-third as high. It is, nevertheless, a very handsome tree, shapely, even rather formal in outline, and amply furnished with its beautiful foliage. Its racemes are 4 to 5 inches in length, and the flowers pale yellow. There is a variety of it which has reddish-purple flowers, and numerous forms (or perhaps hybrids between this and *Æ. Pavia*) exist in nurseries. Some of these, such as *discolor*, *Lyoni*, *neglecta*, *Whitleyi*, and *macrocarpa*, are amongst the handsomest of dwarf Horse-Chestnuts. They are, however, frequently short-lived, owing to the practice of budding them on the common Horse-Chestnut which has been alluded to.

Æ. GLABRA.

Although this species, like all the Horse-Chestnuts, is handsome as regards its foliage, it has no merit as a flowering-tree. The racemes are not large, nor are the flowers; and the latter are of an inconspicuous greenish-yellow. It is a North American species, and is most frequent in the Mississippi Valley, where it is rarely more than 30 feet high; it is now, however, a rare tree in a wild state. Its popular name is the "Ohio Buckeye."

Æ. HIPPOCASTANUM.

The common Horse-Chestnut, in spite of the species subsequently introduced, is still by far the best as a park or avenue-tree. In breadth and bulk, none of the other species approach it, at least in this country. Nor in its splendour as a flowering tree is it equalled by any other of similar size that can be grown in this country. For very long after its introduction to Western Europe, over three centuries ago, its native country could only be conjectured. It was known to have reached more western countries by way of Constantinople, and was believed to have come originally from Northern Asia. It has, however, been found to be a

native of the mountains of Northern Greece. Of several varieties of the Horse-Chestnut in commerce, the most noteworthy and useful is the double-flowered one. The flowers of this variety being very double, and the racemes of large size, give it a very striking appearance, and the blossoms remain longer in good condition than those of the single forms. Var. *Schirenoferi* is also double-flowered, but in what way it differs from the old I have not known it long enough to find out. The curious variety known as *laciniata*, or *asplenifolia*, has its leaves divided into narrow lobes. There are also variegated forms of no particular merit.

Æ. INDICA.

In its foliage this is one of the most striking of the Horse-Chestnuts. The leaflets are more numerous than in any other cultivated species, being usually seven, and frequently as many as nine, to each leaf. The leaflets are often 1 foot long, and the leaf-stalks a rich red colour. There are some small trees at Kew that have flowered occasionally, but they will probably flower with more frequency and freedom as they get older. The raceme is a very fine one, being 8 to 10 inches long, erect, and more slender than that of *Æ. Hippocastanum*; the flowers are white, the upper petal being marked with a yellow blotch, and the lower ones tinged with rose. At Kew, the Indian Horse-Chestnut has proved to be hardy, although there is no doubt it likes a sheltered spot. It comes from the Himalaya, and there reaches a height of 60 to 70 feet, equalling the common species in beauty when in flower. Apparently it almost equals it in bulk as well, for, according to Sir Joseph Hooker, it has a trunk 3 feet in diameter.

Æ. PARVIFLORA (= PAVIA MACROSTACHYA, Gard. Chron., 1877, ii., 657).

Whilst this species is usually seen in a shrubby state, it does occasionally become a small tree. Where space is limited, it is the best of the *Æsculus*, as it usually remains under 9 feet in height, and is of compact, bushy form. Single specimens are sometimes 15 feet or more in diameter. The foliage is of a fine dark green, and is handsome in form, rendering the species one of the most striking of deciduous shrubs. Flowering five or six weeks later than the common Horse-Chestnut, it is not until late July or August that it is at its best; its racemes are slender, erect, and numerous, furnished with pinkish-white flowers, a prominent feature of which are the long, thread-like, more deeply-tinted stamens. It is a native of Eastern North America, where it is found on the foot-hills of the Southern Alleghanies. (See fig. 59, p. 189; and fig. 60, p. ix.)

Æ. PAVIA (PAVIA RUBRA).

This species is often confounded with the red-flowered varieties of *Æ. flava*, with which, possibly, it has hybridised. The true plant is somewhat rare. It is a shrub, usually low and even straggling in habit, but it is perhaps the richest coloured of all the *Æsculus*. The flowers are not abundant on the racemes, but are each 2 to 3 inches long, narrow, and of a bright red. The leaves are small, and of a shining dark green. It is a native of the Southern United States, and is less hardy than most of the American species.

Æ. TURBINATA (= Æ. CHINENSIS HORT., NOT OF BUNGE).

Little can be said of this species as yet, for it is a comparatively recent introduction. It flowered in Messrs. Veitch's Coombe Wood nursery last year, but was, I believe, dis-

appointing. However, it may improve with age. It is perfectly hardy, as might indeed be expected, for it comes from the Island of Yezo (Japan). It is remarkable for its fruits, which are about 2 inches in diameter, and even more distinctly Pear-shaped than those of *Æ. californica* (fig. 58, p. 187).

The tree known in European gardens as *Æsculus chinensis* (or *sinensis*) is this Japanese Horse-Chestnut. The plant figured in *Gard. Chron.*, 1889, v., p. 116, is also *Æ. turbinata*. The true *Æ. chinensis* of Bunge has not, so far as I am aware, been introduced to Europe. It is quite distinct from *Æ. turbinata*, being much more nearly allied to *Æ. indica*. The accompanying figure was made from a specimen that flowered with Mr. Van Volxem thirteen years ago, under the erroneous name of *Æ. sinensis*. W. J. Bean, Kew.

HIPPEASTRUMS.

THEIR CULTURE.—Our earliest-potted bulbs, which were placed in an intermediate-house after they were potted, are pushing up their flower-shafts, and in the case of a collection being an extensive one, which is divided into two portions, the later portion of bulbs may now have their annual repotting, assuming that growth is dormant. Some gardeners repot only a portion of the bulbs annually; moreover, when many are grown, it is not convenient to repot the entire stock, those top-dressed last season being the only repotted ones. I prefer to repot annually, the plants growing the stronger for it. A good turfy loam which has been in stack for a year, two-thirds, some spent Mushroom-bed manure, one-third, and silver-sand, form the potting soil. The exhausted soil should be shaken from the roots, then crock clean pots, putting rough loam over the crocks, following this with a handful of the soil, and make this firm, then put in the bulb, spread out the roots, and let some of the compost trickle in amongst them; make firm and fill up the pot to within an inch of the rim, the shoulder of the bulb being visible. Plunge, if convenient, in a mild hot-bed, not far from the glass, and afford no water before some amount of growth has taken place, the water-syringe being sufficient at the first. When the flower-spikes are well up out of the bulb, afford enough water as will moisten the entire mass of soil, and after this stage keep the soil consistently moist.

If the pots are plunged in a hot-bed, only a moderate amount of water is required. It is customary to surface the hot-bed with tanners' bark or cocoa-fibre refuse. The plants may be grown satisfactorily without a hot-bed. After flowering, place the bulbs in an intermediate-house or a vinery, but not where the shade is dense; water in abundance should be applied during growth, withholding it gradually when the leaves show signs of ripening. At this stage, fully expose them to sunshine, and afford air freely; they must be kept safe from frost. A well-flowered *Hippeastrum* makes a useful vase plant, seldom failing to excite admiration, if of a good type. Bulbs may now be bought fairly cheap; but to those about to grow them, I would suggest the buying of a few good varieties. They cross readily, and produce seed freely, and the raising of seedlings is an interesting occupation. Seedlings flower when fully four years old, and sometimes when three years old if the treatment has been very good. Thrips are sometimes troublesome, but fumigating or sponging with some insecticide will eradicate these; while if grown with other plants troubled with scale, this parasite will attack them. [Bulbs started very early in the year by the



FIG. 59.—*ESCHULUS PARVIFLORA* (*PAVIA MACROSTACHYA*). (SEE P. 188.)

aid of hot-bed frames can be flowered in April, ripened off, rested, top-dressed, and flowered again within the space of twelve months. Such bulbs should not be started early the next year. Ed.] T. H. Slade.

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM × EDMUND ROTHWELL.

THE issue of *American Gardening* for March 1 gives an illustration of this distinct hybrid, together with illustrations of the parents—C. Hookeræ and C. Sallieri Hycanum. The raiser, Mr. J. E. Rothwell, gives an account of the origin of the plant, which first flowered on January 3 this year, six years from the time the cross was made. He likewise gives the following description:—"Dorsal sepal primrose-yellow, darkest towards the base, with a white margin. Petals rich butter-yellow, with a strong suffusion of the purple of the pollen parent (Hookeræ) over the lower half, most intense at the extreme ends. Inferior sepal greenish, much the shape of Hookeræ. The staminode strongly resembles the seed parent, Sallieri, a strong yellow in colour. The pouch also resembles the seed parent in shape, and is of a dark yellow, suffused with a tawny colour. The spots of Sallieri have entirely disappeared from the dorsal, and the general appearance of the flower is a decided improvement over those of the parents, and yet it is quite intermediate."

A TWIN-FLOWERED LYCASTE SKINNERI.

ON several occasions the extraordinary vigour of the plants of *Lycaste Skinneri* in Mr. J. Broome's garden at Llandudno has been commented upon in this journal, and a fresh sending of fine blooms discloses the fact that the vigour of the plants has not decreased. The largest flower is supported by a stem 13 inches in height, and the former is 7 inches across. The others are nearly as large, and in the case of one of them two large flowers are growing on one spike, which present a strange appearance, one flower being arranged almost in front of the other on a foot-stalk 2 inches in length. Flowers of a superb variety of *Dendrobium nobile*, two distinct large forms of *Odontoglossum triumphans*, *O. Hallii xanthoglossum*, and a bright yellow *Lælia Cowani*, which seems to differ in the form of its lip from *L. flava*, are also sent.

LÆLIA JONGHEANA VARIETIES.

THIS fine species bears very large flowers, considering its dwarf habit, and some plants are now in bloom in many gardens. The plant thrives when it is suspended in a light position from the roof of a cool intermediate house. There is great variation in the colour of the flowers, for apart from the occasional albino, this ranges from blush-white to lilac and bright purple, the extraordinary orange-coloured, ridged crest being present in all, but varying also in some degree. Two fine flowers, each about 7 inches across, the one of a pale lilac tint, and the other tinged and veined with dark rose-purple, are kindly sent by J. Broome, Esq., Sunny Hill, Llandudno, exhibit structural differences in a marked degree. The darker flower has the wavy-edged, middle lobe of the lip gradually tapering to the apex, and continuous with the margins of the side lobes, with no perceptible cleft between them. The lighter flower has the middle lobe crimped and broadly ovate, and distinctly separated from the side lobes by a cleft $\frac{1}{2}$ inch in length on each side. Deviation in this respect in some degree is noticeable wherever there are several plants

of the species; but seeing the two extremes together, we perceive how untrustworthy even what many would consider botanical differences are, although distinct species have been made of plants with less clearly defined differences.

PLANT NOTES.

TORENIAS.

THE genus *Torenia* contains some very beautiful species of dwarf-growing greenhouse plants. They are of easy culture, and the plants when in flower are very decorative.

The two best all-round species are *T. asiatica* and *T. Fournieri*, both of which are robust in constitution and remarkable for flowering freely throughout the summer months.

There are two methods by which the required number of plants may be raised. First by sowing seed in the month of April, and when the young plants are sufficiently large, pricking them off singly, and growing them on quickly in a temperate-house; or secondly, by striking cuttings of the young shoots when procurable. If these be inserted in a light, sandy soil, and covered with a bell-glass, roots will very quickly be emitted. An essential point to bear in mind in growing these soft-wooded subjects is to give them every encouragement to grow away freely, without check of any kind. Maintain a genial atmosphere about them, and afford frequent syringings, especially on hot, dry days.

A compost I have found very suitable for *Torenia* is one consisting of one-third loam, one part of flaky leaf-soil (not sifted too finely), and the remaining part Mushroom-bed refuse and sand.

T. Fournieri is of more upright growth than *T. asiatica*, and is well adapted for growing in pots, though the species is sometimes cultivated in hanging baskets, and when well-grown, the *Torenia*s are excellent subjects for this purpose, provided copious supplies of water be afforded them in hot weather, by immersing them in a vessel of water. This method of watering will check the progress of insect pests to some extent.

Thrips and red-spider will sometimes attack *Torenia*s, but with slight fumigations, or syringings with weak insecticides before the flowering stage, they will not do much harm. When the flowers appear, keep the plants near to the light, and discontinue overhead syringings. At this period the plants may be removed to an airy structure that is shaded during the hottest part of the day. The *Torenia*s make very beautiful room-plants, and are not quickly injured by being placed in them. H. T. Martin, *Stonleigh Abbey Gardens, Kenilworth*.

The Week's Work.

THE KITCHEN GARDEN.

By T. TURTON, Gr. to J. K. D. WINGFIELD DIOBY, Esq., Sherborne Castle, Dorset.

Planting Potatoes.—The planting of early Potatoes is a matter which is just now occupying the attention of most gardeners. The earliest crop is obtained from south borders, sheltered on the north by a wall or high building; and on such sites skeleton frames can be fixed for supporting mats or other protecting material when frost threatens in May. Sufficient ground should now be planted to ensure a supply of tubers for the table till those that will be planted a month hence come into use. As an early variety to plant outside and under glass, I prefer Ringleader, which I grow exclusively for this purpose. Assuming that the

sets were all stood on end in shallow boxes as advised in a former Calendar, the shoots will be sturdy and strong, and should be reduced to two or three of the stronger, in the same way as were those planted in frames. The object with the earliest crop of Potatoes is the production of tubers of a goodly size for the table without wasting the energies of the plants in producing a host of very small tubers useless for consumption, which is the case when all the shoots are left. If the border was well prepared by trenching and manuring in early winter, it will be in fine condition for planting with a dibber, a method I prefer, as it economises labour, and avoids much disturbance of the soil. Heavy soils are the better for being thrown into ridges when dug, and these should be levelled, unless the ridges run north by south. The handiest way is to plant in the furrows. A Potato-dibber should be made about 15 inches long and about 3 inches thick. It should be made of hard wood, as Yew-tree branch or Boxwood, and should have a spur of a smaller branch on the top of it to fit between the thumb and forefinger. The sets should not be placed deeper than 4 inches.

Autumn-planted Cabbages.—When the surface is dry and the day fine, put the hoe through the Cabbage-beds, and pick up all the chick-weed and other weeds of any size. The hoeing will check the growth of weeds, and aerate the soil. If the land be of a light nature, make it firm about the plants by trampling round each, all Brassicas succeeding best in a firm soil, and more especially Cabbages.

Broad Beans.—Early Long-pod Beans, sown in boxes as advised in the month of January, should now be standing in cold frames; and after a few days of full exposure by having the lights removed, on the first spell of mild weather set out the plants in shallow trenches on a warm border, in double lines, the plants standing at 1 foot apart in the line, and the trenches drawn at 4 feet apart. Another sowing of a Long-pod variety may be made forthwith on a warm border, and at the same distances apart as those planted out, and also in shallow trenches. Failing an available border, sow in the open quarter.

THE ORCHID HOUSES.

By W. P. BOUND, Gardener to J. COLMAN, Esq., Gatton Park, Reigate.

Odontoglossum citrosimum.—These plants are pushing up their growths, and should be afforded a little more water than they have hitherto received since October, but let there be no forcing of growth till the flower-spikes appear. The good flowering of the plant depends on the treatment afforded in the rest season. At that season they should be exposed to full sunlight, and the ventilation should be ample till the flower-spikes appear; they should also have a large amount of sunshine, and water be gradually increased in quantity.

Potting.—After flowering is over is the best time to repot the plants should it be required, not disturbing them unless the materials are in a bad condition. The compost may consist of turfy peat two-thirds, and chopped sphagnum moss one-third. Pans are to be preferred to pots, as these can be easily suspended on account of the pendulous spikes, and hung close to the glass. The drainage should be good. At repotting, remove the back pseudobulbs with the exception of two behind the leading one. When growing freely after flowering, apply water abundantly, and syringe them overhead on bright days. If placed in an intermediate-house and afforded a good rest during the winter months, with sunshine, no difficulty will be experienced in flowering this species of *Odontoglossum*.

Compost and Drainage.—A compost of two-quarters fibre peat, one-quarter clean chopped sphagnum-moss, one-quarter good leaf soil, well mixed together, will prove a very suitable mixture. I do not advise the use of any crocks in potting *Odontoglossums*; the rhizomes from the peat make an ideal drainage. I am firmly

convinced the introduction of rhizomes in place of crocks for drainage, is one of the greatest advances ever made in the culture of *Odontoglossums*. The pots should be filled to the extent of one-third with chopped rhizomes; do not pot too firmly, and keep the base of the plant below the level of the rim of pot. Finish the operation by inserting two or three clumps of live sphagnum-moss. I do not believe in covering the whole of the surface with sphagnum. Newly-potted plants at any season require careful watering till the growth gets advanced; it is when the plant is growing fast, and the roots are very active, they require water freely.

Thunias.—It is advisable to shake out and repot these plants annually, using a compost of fibry loam one-half, peat one-quarter, leaf-soil one-quarter, with a sprinkling of coarse silver sand, and crocks broken small. The pots should be filled to about one-third their depth full with clean crocks, and over these put some of the rougher potting material. The proper time for repotting, as with most things, is when the young growths are becoming visible. Remove most of the old roots, leaving just enough to steady the plant; pot firmly and keep the surface of the compost below the rim of the pot, making the plant secure to a neat stake. The plants will require very little water until the young growths push forth roots, when the supply may be increased. *Thunias* should be grown quickly, and have plenty of sunshine, which will cause them to flower freely and will strengthen the growths. A place in the Dendrobium-house close to the glass will suit them. I have grown them successfully, hung up close to the glass, in a Croton-house, and if the plants are started without shade, and not allowed to become dry after plenty of roots have formed, no sunshine will injuriously affect them before the middle of April.

FRUITS UNDER GLASS.

By JAMES WHYLOCK, Gardener to the DUKE OF BUCKLEUCH, Dalkeith.

Melons planted at the beginning of this month in the warmest and sunniest part of a forcing house, will require no water at the roots nor any syringing for a time, moist atmosphere sufficing for them. Melons require a heavy soil mixed with lime-rubbish, not rotten dung. Earlier sown Melons, now at the fruiting stage, may be afforded a steady bottom-heat of 85°, and a drier atmosphere about them. Pollinate the female flowers with pollen during sunshine, after making sure there is the required number of female flowers upon the plant, that they may all swell alike when the crop is set. Afford a good application of manure-water, but leave a portion round the collar of the plant 6 inches wide not watered. Melon-plants will now be showing the roots on the surface of the soil, and a top-dressing should be applied, containing a little artificial-manure, and mulch with horse-droppings. Temperature by night 70°, by day 80° to 85°.

Muscat of Alexandria Vines started at the beginning of January, being now in flower, require a night temperature of 70°, and two or three degrees warmer if the weather be mild. During the day, with sun-heat, the temperature may run up to near 90°, and keep the air of the house moist. Fresh air should be admitted in small quantities evenly over the house. Distribute the pollen by gently tapping the trellis, or drawing the hand over the bunches of flowers. Do not thin the fruit so early as Hamburgs are done, but wait until it can be seen which berries will swell kindly. Muscats throw an abundance of bunches, but for all that avoid heavy cropping. Attend frequently to the stopping and regulating; do not permit the growths to be too numerous, and in removing them do this gradually. Keep all the main foliage clean and healthy. Syringing must be discontinued whilst the Vines are in flower, but throw plenty of water about the house, occasionally using manure-water for the purpose. If the roots are at the surface,

afford one or two sprinklings of Thomson's Vine-manure on the inside border after the fruit is set, and apply water afterwards. Want of proper nourishment induces red-spider quicker than anything. Muscats require a mean temperature of 70° to 75° all through. Muscat Vines now breaking into growth will require a temperature at night of 60° or 65°, according to the state of the weather, shutting up in the afternoons with sun-heat 80° or 85°. Syringe the Vines twice daily, and by damping the paths and other surfaces keep the air moist. Young Muscat Vines coming into bearing, if progressing, will have strong wood, and will require to be kept in a temperature as low as 50°, to induce the eyes to break equally. No attempt should be made to force such Vines, whether Muscats or other variety.

Late Vineries should now be started, so that the fruit may ripen by the end of September. If there is a considerable depth of surface-soil on the border, and no roots in it, remove this and top dress with finely-chopped turfy loam, adding a spadeful each of bone-meal and Thomson's Vine-manure to every wheelbarrowful of loam. Afford the inside border a thorough application of water before applying the top-dressing.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Bush-fruit Quarters.—The dressing of the bushes that were pruned lately should be carried out with well-decayed pig or cow-dung, and the ground lightly dug with a fork before the wind carries its manurial properties away. I have the ground dug close up to the stems of the bushes, the continual trampling on the ground when gathering the fruit making the soil quite hard. The soil round about newly-planted bushes is not touched. Bushes that are top heavy should be provided with a stout stake about 2½ feet long, 1 foot of which should stand above the soil, and to this the stem should be fastened with willow twigs or tarred string. Bush quarters dug over at an earlier date should be stirred with the flat hoe in dry weather, as should also the Raspberry quarter. Where it is the custom to lightly dig the soil between Strawberries, in order to bury the dressing of manure, the work should be carried out forthwith; and as the plants are now making growth, any withered or decayed foliage should be removed before the digging is begun. At Bicton the plants have not suffered nearly so much as in some seasons, but up to the present we have had very little east wind.

The Fruit Room.—The stock of fruits should be examined weekly, and fruits removed that show any signs of decay—and though late varieties of Pears and Apples in general are keeping well this season, there are sure to be some that are rotting. As the re-grafting of worthless varieties with better will now be in full swing, it may not be amiss to enumerate some, the good keeping qualities of which have been proved for some years past. Among desert Apples, Blenheim Orange Pippin, Adams' Pearmain, Searlet Nonpareil, King of Tompkins County, Baumann's Red Reinette, Ribston Pippin, and Sturmer Pippin, are still plump; and of culinary Apples, Bramley's Seedling, Newton Wonder, Beauty of Kent, Rymer, Wadhurst Pippin, Alfriston, Annie Elizabeth, The Sandringham, Norfolk Beefing, Tower of Glamis, Betty Geeson, and Dumelow's Seedling, are still very good.

THE FLOWER GARDEN.

By R. DAVIDSON, Gardener to EARL CADOGAN, Culford Hall, Bury St. Edmunds.

Seeds.—Numerous seeds of annuals will have to be sown during the next six weeks, most of which may be raised in cold pits furnished with moveable sashes; the varieties that are quite hardy in beds or patches in the open, in well prepared soil, sowing when the weather is fine, and the soil in a fairly dry condition.

Salpiglossis, *Phlox Drummondii*, and *Zinnias*, should be sown at about this date on a mild hot-bed, having an even covering of finely sifted soil 2 inches deep, made smooth and thoroughly moistened. The seeds should be thinly broadcasted, and covered with finely sifted soil to the depth of ¼ inch, shading the soil till germination has taken place; and the seedlings should not be allowed to flag or even become dry. With regard to *Zinnias*, when the seedlings are large enough to be pricked off, they should be placed in moderately-rich soil, singly in 60's, or three in a 48-sized pot.

Violas struck from cuttings last autumn, if hardened off, may now be planted out-of-doors where they are to flower. The soil for *Violets* should receive a dressing of charred garden refuse, as in this substance the *Violet* roots freely, makes fine large clumps in a short space of time, and if a slightly shaded position can be afforded, the flowering will be much prolonged.

Calceolarias.—These plants, if well rooted, should be transplanted to cold frames at about 5 inches apart, the soil used being loam two-thirds, spent Mushroom-dung one-third, to which some sharp sand must be added. Keep the frames close for about a week after transplanting, then expose the plants gradually to the air, and do not stint them for water when growing. Only when frost threatens is there any need to cover the frames at night.

Bedding Hyacinths.—The flower-heads have just come through the soil, and will need some sort of protection against frost, such as would be afforded by spreading cocoa-nut fibre refuse 1 inch thick over the beds, which might remain till the flowering period is over. This layer preserves the flowers from being splashed by the rain, which spoils the white and light coloured varieties.

Helleborus plants gone out of flower should be mulched with rotten manure. *Hellebores* are impatient of removal, but if additional clumps are desired, some of the larger clumps may be dug up now and divided, and the divisions planted in trenched ground in a moist, partially shaded situation. If the soil is retentive, put in plenty of drainage materials below the plants. Hybrids of *H. orientalis* now in flower should be protected from rain by means of handlights or bell-glasses.

PLANTS UNDER GLASS.

By J. C. TALLACK, Gardener to E. MILLER MUNDY, Esq., Shipley Hall, Derby.

Eucharis.—Those plants potted as recommended some few weeks back now require to have water carefully afforded, as excess at this period would be injurious to any roots that are just beginning to seize upon the new soil; and it is this which makes the repotting of healthy *Eucharis* unpopular with gardeners. Atmospheric conditions should be watched, for the hot, steamy atmosphere that some gardeners maintain and advise is bad for the new leaves, which, under such conditions are thin, and endure but badly. Shade is necessary, but it should be accompanied by sufficient ventilation. The best plants of *Eucharis grandiflora* (amazonica) I have ever grown were kept in a healthy and vigorous condition under the shade of a fan-trained Fig-tree during the greater part of the year, the abundant moisture accompanied by free ventilation necessary for the Figs suiting the *Eucharis* admirably; and these plants remained in excellent condition without spot or blemish for many years under my charge. I mention this fact, here, as showing the exact conditions I would maintain for *Eucharis* generally, which will produce abundant leaves of a leathery texture, not likely to succumb to any fluctuations to which the plants may be exposed.

Deutzias which have flowered should have much of the old wood cut hard back, in some cases almost to the level of the soil, and be placed in a forcing-house. New shoots will soon form, which will flower much better, and be more useful than the usual thicket of old wood which the plant so often presents.

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.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Illustrations.—The Editor will thankfully receive and 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 the unused communications or illustrations, unless by special arrangement.

APPOINTMENTS FOR THE ENSUING WEEK.

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| SUNDAY, | MAR. 23 | Exhibition of Hardy Trees and Shrubs at Boskoop. |
| TUESDAY, | MAR. 25 | Royal Horticultural Society, Committees Meeting. |
| WEDNESDAY, | MAR. 26 | Torquay Gardeners' Society Spring Show. |
| FRIDAY, | MAR. 28 | Good Friday. |

SALES FOR THE WEEK.

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| MONDAY, MAR. 24.— | Roses, Hardy Plants, &c., by Protheroe & Morris, at 12.0. |
| TUESDAY, MAR. 25.— | Collection of Orchids, by the late E. Hopper. Esq., at 67, Cheapside, by Protheroe & Morris, at 12.30.—Roses and other Plants, by Pollexfen & Co. |
| WEDNESDAY, MAR. 26.— | Azaleas, Palms, &c., by Protheroe & Morris, at 12. Odontoglossum crispum, by Protheroe & Morris, at 12.30.—Palms, Decorative Plants, Roses, &c., by Mr. J. C. Stevens, at 12.30.—Palms, Roses, Carnations, Azaleas, Rhododendrons, &c., at Stevens Rooms, at 12.30.—Roses, Bays, Palms, &c., at Pollexfen & Co.'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°.

ACTUAL TEMPERATURES:—

LONDON.—March 19 (6 P.M.): Max. 59°; Min. 44°.
March 20.—Rainy, colder.

PROVINCES.—March 19 (6 P.M.): Max. 51°, S. Midlands; Min. 39°, Orkneys.

The Horticultural Hall. BEFORE this issue can reach the reader's hands, it is probable that the Horticultural Hall scheme—if associated with a great International Exhibition, so much the better—will have been accepted, rejected, or its consideration postponed. We have already laid before our readers the reasons why, in our opinion, it should be accepted. We have reason to know that the advisory committee, presided over by Baron SCHRÖDER, and comprising several members of the Council, was unanimous in its recommendation of the site in Vincent Square, as the most suitable locality for the erection of the proposed Hall. Postponement would be highly inconvenient—perhaps fatal; rejection seems to us, in the circumstances, scarcely possible.

The only alternative scheme, so far as we know, is the formation of a new garden. The very formidable objections to such garden-schemes as were formulated last year need not be repeated. They remain in full force.

A properly-equipped research-garden, or experimental-station, directed by a scientific investigator, such as may be counted by the score in the United States and Germany, is quite another matter. This need not interfere with the present garden operations. But it will be time to consider these matters when the question at present before the Fellows is settled. One thing at a time.

THE PROPOSED HALL.—As it is the unexpected that frequently happens, any scheme that be submitted by the Council should have the fullest discussion, even if more than one meeting be necessary. Moreover, Fellows resident some distance from London should have an opportunity of expressing their opinions. We as fully appreciate the importance of the Society having a suitable building in which to conduct its business, house the magnificent library under its charge, and hold its meetings and minor exhibitions, as the most strenuous advocate of a horticultural hall; but we are extremely anxious that the Society should not be crushed by bricks and mortar, or be so crippled as to be unable to maintain an experimental garden in a full state of efficiency. *Gardeners' Magazine*.

—We found the place without the slightest difficulty, and discovered that all that had been said in favour of the site was no elaboration, and that the place is, in the highest sense, eminently satisfactory. The corner of Bell Street proposed to be rented for the hall, seems to be at present a goodly sized garden belonging to a villa standing alone. Being walled-in, the space cannot be seen from the street. It is a most convenient position, however, and is exactly at the corner where Bell Street meets Vincent Square Road at right angles. Vincent Square, by the way, is really a ten acre green grass park or playing-field, used by the boys of Westminster School. Thus, right in front, there is ample freedom and a pleasant survey. Bell Street, at present, is composed of low-roofed houses, and tenanted by labouring people, but the whole neighbourhood is highly respectable even now, and is yearly being remodelled into one where handsome residential flats, churches, and such other buildings form the composition.

Fellows of the Society who desire to see the ground and its surroundings before voting at the meeting on the 21st, can do so by a three-minutes' walk from the present exhibition hall in Buckingham Gate. Cross into Artillery Row (which is exactly opposite Buckingham Gate), and at the bottom of the street bear round to the left behind the Army and Navy Stores, where there is a wide, open, paved space. Here take the right hand and cross into Greycoat Street, on the left, this leading into Bell Street, at the end of which the site lies. The whole distance is not more than 400 yards.

It is earnestly hoped that Fellows who support the proposed new Hall movement will be forward at the meeting in the Drill Hall at 3 o'clock, and that at last the Society will sign its intentions to take the necessary steps towards the erection of a suitable edifice for its floral exhibitions, its library, offices, lecture-hall, and council chamber. £5,000 have already been promised, and at least another £5,000 can be expected by an appeal to the 5,500 Fellows, without touching the standing funds of the Society at all. The expenditure of £750 a year extra on ground-rent for the proposed Hall is a mere bagatelle in face of the constant accession of Fellows, and also in view of the likely attractions of such a Hall. *Journal of Horticulture*.

THE ROYAL HORTICULTURAL SOCIETY'S COMMITTEES, will meet on Tuesday next, March 25, in the Drill Hall, Buckingham Gate, Westminster. A lecture on "The Defence of Plants," will be given by Professor CARR, at 3 p.m.

—At the Narcissus Committee meeting at the Drill Hall, on Tuesday, March 25, a discussion will take place on the *Daffodil*, *Merodon equestris*.

—At a general meeting of the Royal Horticultural Society, held on Tuesday, March 11, fifty new Fellows were elected, amongst them being Lord HILLINGDON, Lady MILLAIS, Lady MARGARET DOUGLAS, Major H. A. CUMMINS, Major L. H. PRIOLEAU, and Capt. W. O. CANTLEY, making a total of 305 elected since the beginning of the present year.

—EXAMINATION IN HORTICULTURE.—The Royal Horticultural Society's Annual Examination in the Principles and Practice of Horticulture, will be held on Wednesday, April 23. Intending candidates are requested to send in their names to the Secretary, Royal Horticultural Society, 117, Victoria Street, London, S.W., as early as possible. A stamped and directed envelope must be enclosed with all communications requiring a reply.

MR. J. G. BAKER has been lecturing in Ireland, and inspecting the botanical collections near Dublin. The Royal Irish Academy made him an honorary member on the occasion.

THE SCOTTISH HORTICULTURAL ASSOCIATION has just published its *Transactions*, including a copy of the Constitution and by-laws, the Syllabus for session 1902, and the twenty-fifth annual report. Abstracts are also published from the following papers delivered during the past year:—The Gladioli, by W. Kelway; The Root Management of Apples and Pears, by M. Temple; Spring Bedding, by John Cumming; The Florist and his Flowers, by J. Forbes; Pear Culture for Scotland, by J. Cannison; The Cultivation of the Malmaison Carnation, by D. Kidd; Judging at Country Shows, by James Bird; Roses for Garden Decoration, by Geo. Gordon; Public Parks, by Jas. Dobbie; The Tomato, by C. Blair; and Palms, by Geo. Wood. The Association has now more than 1100 members, and may be congratulated on its healthy and energetic condition. The meetings are held at No. 5, St. Andrew Square, Edinburgh, on the first Tuesday of each month, at 7.30 P.M., excepting in January, when the meeting is on the second Tuesday. The Secretary is Mr. PETER LONEY, 6, Carlton Street, Edinburgh.

THE SURVEYORS' INSTITUTION.—The next ordinary general meeting will be held in the Lecture Hall of the Institution on Monday, March 24, when the adjourned discussion on Mr. C. H. BEDELL's paper, read at the meeting of the 10th instant, entitled "The Insurance of Buildings against Fire," will be resumed. The chair will be taken at 8 o'clock. The Institution will be closed from Thursday evening, March 27, to Wednesday morning, April 2.

AN ANNUAL AILANTHUS?—In a communication to the *Popular Science Review* for July, 1872, was mentioned an instance wherein a shoot was produced from the root or underground branch of *Ailanthus glandulosa*. The shoot was only about a foot in height. Beneath it bore simple leaves, which passed gradually into pinnate leaves, these latter being succeeded by simple leaves at the base of a perfect inflorescence. We have now received some seedlings of the same species from Mr. DINTER, the Superintendent of the Forest Station at Brakwater, German South-west Africa, which show an even greater degree of precocious flowering. The seedling plants are only 2 or 3 inches in height. In some cases the cotyledons still remain, and the foliage shows the same transition from the simple to the pinnate form, and while the lower leaves are alternate, the upper ones are opposite; and the stem, as in the former case, is terminated by an inflorescence of perfect flowers. Here, then, we have a plant which is usually a tree, not producing its flowers till it has attained a considerable height and an age reckoned in decades of years, hurrying through its life like an annual, and suggesting, as Mr. DINTER says, the possibility of the ancestors of the *Ailanthus* having been annuals. Mr. DINTER does not tell us the conditions under which these seedling *Ailanthus* grew, but we can recall a similar instance in the case of a *Philadelphus* in our own garden, where a seedling plant grew from a chink between two glazed tiles under unpropitious circumstances, but produced cotyledons, leaves, and one terminal flower, though the whole plant was only about 1 inch long.

EARLY FLOWERS.—Mr. DIVERS, gardener to the DUKE of RUTLAND, Belvoir, writes of these: "Since the frost of February disappeared, we have had a great awakening among the early plants and shrubs, and although later than usual in commencing, several of them are now quite gay with flowers, viz., *Rhododendron*

præcox, *R. dahuricum*, *R. altaclarensis*, *R. Nobleanum*, and *R. Jacksoni*, which are making the gardens look quite bright; and although liable to have their blossoms killed by the first frost, they should always be planted plentifully if the soil can be made to suit them. *Forsythia suspensa* on a south wall is a sheet of golden blossoms; and close by a plant of *Cydonia japonica* has to-day (Mar. 15) opened its first flowers; an ordinary March frost does not injure these. Of lowlier growth, but not less pleasing, *Scilla bifolia* and *Iris reticulata* are in full bloom; the same may be said of *Anemone blanda*, which sometimes commences early in December. Of varying shades of purple, these plants look best if kept at a distance apart, and the same rule applies to *Chionodoxa Lucilæ*, *C. sardensis*, and *Scilla sibirica*, which are now commencing to open. With the exception of *Anemone blanda*, none of these show to advantage the first year after planting, even when every possible care is taken; they always look best after three or four years' growth in one position, when the flowers appear in quantity and form compact masses. *Anemone fulgens*, which sometimes gives us a good quantity of flowers in January, only opened its first bloom on March 6 this year; but it will soon be a mass of scarlet—a broad row 400 feet long will be in bloom in a fortnight. This is one of the most useful hardy flowers we have, easily grown, perfectly hardy, free flowering, keeping up a good succession, lasting well in water when cut, and of a colour which I have never heard anyone object to at this season. Unfortunately for me, pheasants are very fond of it in every part—roots, leaves, and flowers: they will destroy all that they can reach, and as the birds are not to be frightened away by anything, I can only grow *Anemone fulgens* and *A. blanda* in the kitchen-garden, but were it otherwise, some good beds of these plants about the flower gardens would give a welcome mass of colour for several weeks."

WILLIAM CUTBUSH & SON.—A paragraph has gone the round of the papers, announcing the death at Highgate, by suicide, of **WILLIAM CUTBUSH**, "the well-known florist." We are happy to state that the report does not apply to any member of the well-known firm of nurserymen at Highgate, but to a news-vendor of the same name.

MIDDLESEX COUNTY SCHOOL OF HORTICULTURE.—A scholarship at the above school of the value of £25 for one year, and renewable for a second year, has been awarded to **LEONARD M. YOUNG**, of 51, Leicester Road, East Finchley, N.

THE SOUTHERN COUNTIES CARNATION SOCIETY.—The fourth annual report of this Society, has just been issued. In addition to a detailed report of last season's show, the pamphlet contains a very interesting letter from Mr. **MARTIN R. SMITH**, upon the breeding of new varieties of Carnations, and articles from other well-known Carnation growers, upon "Carnation and Picotee Shows," "Carnations in Scotland," "Flakes, Bizarres, and Picotees," "The Carnation in 1901," "Carnation Lore," and "A Paper for those commencing to grow Carnations." A list of yellow-ground Picotees and Fancies as classified by the National Carnation and Picotee Society, is included, and a schedule of the prizes to be offered at the forthcoming show of the Southern Counties Carnation Society, to be held on a date about the middle of July. There are twenty-five classes for Carnations and Picotees, and particular attention is drawn to a class for six blooms of any variety

of Carnation or Picotee, to be shown in bottles, tins, or glasses, with not less than six inches of stem, without paper collars, &c.; a burst calyx will disqualify a flower. The Hon. Secretary is Mr. **W. GARTON, jun.**, York Buildings, Southampton.

"THE PROFITABLE FARM AND GARDEN."—The second annual volume of our contemporary, *The Profitable Farm and Garden*, edited by Mr. **T. W. SANDERS**, is now before us. It deals with live stock, horses, dairy farming, poultry keeping, market gardening, bee-keeping, and other profitable industries connected with the land. The weekly parts bound form a bulky tome full of information, and abundantly illustrated in black and white, and with coloured plates. We commend the book to all interested in the subjects of which it treats. The publishers are Messrs. **W. H. & L. COLLINGRIDGE**, Aldersgate Street.

THE FRUITERERS' COMPANY.—A prize of 25 guineas, together with a Gold Medal, is offered by the Worshipful Company of Fruiterers for the best essay on "Gathering, Preparing, Packing, and Profitably Disposing of Home-grown Fruit and Vegetables by Cottagers and others with Small Holdings." The essay is not to exceed 25,000 words in length, and is to be addressed to the Clerk of the Worshipful Company of Fruiterers (**JOHN EAGLETON, Esq.**), 40, Chancery Lane, W.C., not later than October 1, 1902. Intending competitors should write to the above address for full conditions.

READING COLLEGE.—An excellent summary of information relating to the nature and mode of application of manures to various crops has been prepared by Mr. **DOUGLAS A. GILCHRIST**. It should be studied by farmers and market gardeners. We presume it may be had for a small sum on application to the author, Reading College.

THE ALMOND.—The first expanded bloom noticed at Ealing was on March 15, the same date as last year.

"BACHELOR'S BUTTON."—We like popular names, they are so easy and so exact in their application. Just so! Here is our contemporary *Indian Gardening* informing us that in India the *Globe Amaranth*, *Gomphrena globosa*, is universally called Bachelor's Button.

AMERICAN CARNATION SOCIETY.—The annual meeting of this Society held at Indianapolis, February 19 and 20, was very successful, and would have been more so had it not been for a violent storm which delayed the trains and prevented some exhibitors altogether from reaching their destination.

ADDITION TO EPPING FOREST.—At last week's Court of Common Council, a communication was read from Mr. **G. BUXTON**, relative to the purchase by him of the rights of the Lord of the Manor of Theydon Bois, which includes the greater part of Bell Common, Epping, and the waste land along the Ivy Chimnies Road, and offering to present the same to the Corporation of London, in order that it might form a part of Epping Forest. Needless to say, the offer was gratefully accepted.

NURSERY AND SEED TRADE ASSOCIATION.—The annual meeting of this Association was held on Tuesday, the 11th inst., at the offices of the Association, 30, Wood Street, Cheapside, E.C. Mr. **JOHN HARRISON**, of the firm of Messrs. **HARRISON & SONS**, Leicester, was the Chairman. The twenty-fifth annual

report and balance-sheet was read and adopted, and the President, officers, and members of the Association for last year were re-elected for the present year.

HONOURS TO HORTICULTURISTS.—We are glad to hear that **M. BOIS**, the Secretary-Editor of the National Horticultural Society of France, has been nominated a Chevalier of the Legion of Honour. **M. GEORGES TRUFFAUT** has also been nominated as Officer d'Académie.

COLONIAL FRUIT SEASON, 1902.—We have received advice by telegraph from Sydney of the following shipment of fruit:—per Orient Co.'s *Ophir* (expected to arrive here about April 12), 22,000 boxes; per P. & O. Co.'s vessel *India* (expected about April 19), 25,000 boxes; per White Star *Medoe* (expected to arrive about April 19), 18,000 boxes, including 7,600 for Liverpool.

THE CARDIFF AND COUNTY HORTICULTURAL SOCIETY'S schedule of prizes to be offered at the next annual exhibition on July 23 and 24 has just reached us. There are 104 classes for plants, flowers, fruits, and vegetables, in addition to forty classes which are exclusively for amateurs. The exhibitions are held by permission of the Marquis of BUTE in the Sophia Gardens, Cardiff. The Secretary is Mr. **HARRY GILLET**, 66, Woodville Road, Cardiff.

THE BRADFORD HORTICULTURAL SOCIETY'S exhibition, to be held on August 29 and 30 next, will consist of plants in pots, cut flowers, fruits, and vegetables. The schedule before us contains 109 competitive classes. The Hon. Secretary is Mr. **W. D. B. PEARSON**, Peel Park Hotel, Bradford.

SHEDDING OF HYACINTH FLOWERS.—A correspondent sends us several specimens in which the spike falls off in the most disappointing way. It is not at all uncommon, and is the result of irregular or disproportionate growth. The flower-stalk grows too fast, and is nipped off at the base by the unyielding scales of the bulb, between which it is thrust up.

"NATURE STUDY JOURNAL."—Wye College, Kent, an old grammar school, now devoted to other purposes, is certainly a progressive establishment, and one from which we hope much. One of the latest developments is the publication of a *Nature Study Journal*, giving hints to teachers as to the readiest means of getting children to use their eyes and their brains, of interesting them in what is going on around them, and of furnishing them with information which will eventually be of direct service to them in their occupations.

"FAMILIAR WILD FLOWERS."—This publication, arranged by Mr. **F. E. HCLME**, continues to be very popular, and a new and enlarged series is now being brought out. The first part contains a plate and description of the Evening Primrose (*Oenothera biennis*), an importation, and not a wild flower; Butterbur (*Petasites vulgaris*), Hare's-foot Trefoil (*Trifolium arvense*), Hogweed (*Heracleum sphondylium*), Bird's-eye Primrose (*Primula farinosa*), Dyer's Greenweed (*Genista tinctoria*), Ivy (*Hedera helix*), Black Horehound (*Ballota nigra*), Gladdon (*Iris foetidissima*), and Hemlock Water-Dropwort (*Enanthe crocata*). "Familiar" wild flowers have English names, but these, unfortunately, are not always familiar, and vary with locality, so are not always helpful. This bright little publication is sent out by **CASSELL & Co.**

CARNATION ANTHRACNOSE.—During the past few weeks several specimens of diseased Carnations have been sent to the *Gardeners' Chronicle*, and to the Scientific Committee, which

have been rather [puzzling to determine on account of imperfect development, with the exception of those suffering from the presumed Bacteriosis, which correspond to the American diagnosis. Specimens recently sent, in good quantity, were fortunately better developed, and exhibit the ravages of a parasite new to this country, and apparently before undescribed. It is of the kind known in the United States by the general name of Anthracnose, and is in all cases a destructive pest. The leaves are at first spotted with small purple roundish spots. These gradually enlarge and become confluent and indeterminate, and at length brownish in the centre. Meanwhile the leaves become sickly, and commence to die off at the tips. The pustules are not to be distinguished by the naked eye, and scarcely by the aid of a lens. Cells beneath the cuticle supply the place of definite receptacles, and in them a large number of elliptical hyaline sporules (ten to twelve by five μ) are produced, which escape through the fissured cuticle. At length the cuticle about the orifice turns pallid, and appears as a pale dot on the purple spots. No described species of *Glæosporium* has been found which answers to this diagnosis, and hence we have called it—

Glæosporium Dianthi (Cooke).—Amphigenous spots at first small, roundish, dark purple, then confluent and indeterminate, sometimes turning brown at the centre. Pustules indistinct to the naked eye, but finally pale at the orifice. Sporules elliptical hyaline (ten to twelve by five μ). No remedies have been tried, but it would be advisable to apply diluted Bordeaux Mixture, so as to destroy the extruded sporules, and to pick off as many of the diseased leaves as possible. M. C. Cooke.

BIG HEADS AND LITTLE HEADS.—There is a prevalent impression that there is some relation between the size of the skull and the quality of the brain power within it, so that men with large heads should be more intelligent than small-headed people, and *vice versa*. Prof. KARL PEARSON and his assistants have worked out this problem by measurements, statistics, and mathematical demonstrations, and they arrive at the conclusion that for practical purposes it seems impossible, either in the case of exceptionally able men, or in the bulk of the population, to pass any judgment from size of head to ability, or *vice versa*. *Proceedings of the Royal Society*, No. 456, March, 1902.

CONGO PLANTS.—Under the auspices of the Congo State, M. DE WILDEMAN is publishing a series of illustrations and descriptions of plants constituting the flora of Katanga. The descriptions are elaborated with the care and accuracy characteristic of the author; and the quarto lithographic plates are excellent. We regret the necessity for placing plants of different Orders on the same plate.

SPRAYING.—The *Canadian Horticulturist* recommends for spraying purposes a mixture of lime, sulphur, and salt, as much less expensive than and equally efficient as Bordeaux Mixture. The quantities used are lime, 35 lb.; salt, 15 lb.; sulphur, 15 lb.; water to make 40 gallons. The mixture is boiled for three hours in an iron kettle and applied hot.

PUBLICATIONS RECEIVED.—*Nature Notes*, March. —*Proceedings and Journal of the Agricultural and Horticultural Society of India*, for July to September, 1901. This pamphlet includes also a figure and description of *Raphis flabelliformis*, and brief notes of other plants mentioned in the Society's lists.—*Bulletin of the Botanical Department, Jamaica*, January and February, 1902. Contents: Report of the Orange Conference; Japanese Persimmon (*Diospyros*).—*Bulletin of Miscellaneous Information, Botanical Department, Trinidad*, January. Contents: An Insect-destroying Fungus; *Bougainvillea spectabilis*: Root Irritation; Grafting Coffee and Cacao, and Budding Oranges.—*The Queensland Agricultural Journal*, January: "The year 1902 opens with great promise. The Wheat harvest has

been a record for Queensland. The yield of sugar has been most satisfactory on the whole. Fruit culture is extending." So says the preface to this, the first number of the fifth yearly volume. Various appropriate illustrated papers are included.—From the Jamaica Board of Agriculture: *A Report on the Cultivation of Pine-apples and other Products of Florida*, by Robert Thomson. "Our illimitable resources await enterprising Englishmen to embark in Orange-growing."—From the Ontario Agricultural College: *Bulletin 118, Yeast and its Household Use*, by F. C. Harrison; this should be read by all interested in the subject.—*An Edible Fungus* (*Hydnum erinaeum*), by J. C. Arthur; and *Horse Nettle* (*Solanum Carolinense*) and *Buffalo Bur* (*S. rostratum*), by the same author.—Illustrated Papers reprinted from the Annual Report of the Indiana Agricultural Experiment Station.—From the New York Agricultural Experiment Station: *Bulletin No. 199*, November, 1901, *An Epidemic of Currant Anthracnose*, by F. C. Stewart and H. J. Eustace; *Bulletin No. 220*, November, 1901, *Notes from the Botanical Department*, by the same authors.—From the University of Illinois Agricultural Experiment Station, Urbana, December, 1901, *Bulletin No. 67, Apple Scab*, by G. P. Clinton; and *Bulletin No. 68*, January, 1902, *Important Details of Spraying*, by A. V. Stubenrauch.—From the University of Minnesota, Department of Agriculture, *Class Bulletin No. 12*, December, 1901, *Outline of Greenhouse Laboratory Work*, by Samuel B. Green and R. S. Mackintosh; excellent practical lessons are given that every gardener might study with advantage.—*Clues to Relationship among Heterocercous Plant Rusts*, by J. C. Arthur, reprinted from the *Botanical Gazette* (U.S.A.), January, 1902.—From the U.S. Department of Agriculture, *Bulletin No. 31*, *Proceedings of the Thirteenth Annual Meeting of the Association of Economic Entomologists*, records investigations concerning the Codling-moth, Hessian-fly in New York State in 1901, Jarring for the Curculio in Georgia, San José Scale in Japan, New Species of Aphis, &c.

ANGRÆCUM ICHNEUMONEUM.

[SEE SUPPLEMENTARY ILLUSTRATION.]

THIS elegant species was first described by Lindley in his paper on "West Tropical Orchids," in the *Journal of the Linnean Society*, vol. vi. (1862), p. 136. He there speaks of it as a very fine species, with leaves 15 inches long and 2 inches broad, with spikes of the same length. The white flowers, when unexpanded, look very like some *Ichneumon*-fly settled on the inflorescence.

Reichenbach, in alluding to this plant in the *Gardeners' Chronicle*, December 3, 1887, p. 681, says:—"Scientifically, I call it *Listrostachys*, as the two caudicles adhere to one gland"—a character which he admits may easily be overlooked. The only absolute difference between the two genera is that *Angræcum* has a single stalk to the pollen-masses, whilst *Listrostachys* has two. For these reasons, Rolfe, in the *Flora of Tropical Africa*, vii. (1898), p. 163, keeps the two genera distinct, whilst the *Index Kewensis* combines the two under one (*Angræcum*).

Our illustration shows how well Mr. Tallaek, of Shipley Hall Gardens, manages the plant, and how elegant it is. The plants require abundance of heat and light, and from their evergreen habit must never be allowed to become dry.

SELECT SWEET PEAS.

I HAVE read with much interest "T. H. B.'s" and "R. Sydenham's" remarks on the twenty-four varieties of Sweet Peas recommended by me in the *Gardeners' Chronicle* of January 11.

Both of these gentlemen are, I think, under the impression that the twenty-four varieties given were meant as the best twenty-four for exhibition purposes. But this is not the case. Were I asked to name twenty-four varieties for exhibition, they would find them to be entirely different to the varieties already enumerated. Then "T. H. B." would learn that I am not altogether against striped varieties. Princess of Wales is a grand Pea among the striped varieties, and has an excellent companion in Senator, a very large flower of commanding appearance, striped chocolate-coloured on a creamy ground. America is well known to me, and has a good companion in Aurora, a better and larger Pea in every respect; in colour it is white, flaked with orange-salmon.

"T. H. B." says Navy Blue will always hold its own among the dark blue varieties, in which Emily Eckford

and Captain of the Blues are favourites; but my favourite is the Captain.

Captivation is a fine variety, and one I have grown for two seasons; but I like Duke of Westminster much better. Fine orange-pink varieties are given in my list, and all favourites and good. Miss Willmott is one of the largest in this class of colour, but I think it will take something even better to remove that grand variety Gorgeous from taking first place, when well grown and shown in good form. Unfortunately, the latter has rather a weak constitution, therefore it requires a little more care and attention to bring it to perfection. Miss Willmott is grand, and possessed of a sound constitution, and a general favourite by all who know it. In yellow or primrose colours I have no hesitation in saying that the new variety, The Hon. Mrs. E. Kenyon, is the best and the largest Sweet Pea in cultivation. Queen Victoria would make an excellent companion to the former.

Mrs. Dugdale is a splendid flower, which, as your correspondent says, has a tendency to become streaky. Yes, if exposed to the full rays of the sun. This is a variety, like many more of these soft colours, that will be better for heavy shading during the hottest part of the day. Experience teaches me that all Sweet Peas known to myself, something like 120 varieties, are more or less partial to shade. "T. H. B.'s" selection of a dozen varieties is undoubtedly a good one.

Your correspondent "R. Sydenham" thinks Captain of the Blues is not required with Emily Eckford. Navy Blue is not unknown to me, I having grown it for the last two seasons, but I like the Captain best, and in my opinion he is more at home with Emily Eckford than with Navy Blue.

In place of Chancellor, Mr. Sydenham would substitute Coccinea. Very well; I should say "do so, if it be to his taste." It is not mine. Coccinea is a good flower, with erect, round standard, good form; in colour it is bright cerise, and I believe will become a very popular variety. At the present time we require something different to Coccinea to deprive Prince Edward of York of the dignity as being the nearest approach to a scarlet Sweet Pea. This, at least, is my opinion.

Your correspondent thinks Chancellor is too much like Lady Mary Currie. In my opinion it is perfectly distinct. Had he said that Lady Mary Currie was too much like Miss Willmott, then he might have justified his cause. Miss Willmott is, in my opinion, a very much enlarged Lady Mary Currie.

Oriental I discarded last year as an inferior variety to those already enumerated in my selection of orange-pink varieties.

Duchess of Westminster, as grown here, is a lovely variety, and very reliable. It is, unfortunately, undersized, as compared with the giants that appeared with it in 1900, and from the same raiser, Mr. H. Eckford; but its magnificent form and charming colour make good any deficiency in size. In colour it gives a ripe Apricot effect, with flushed pink standards.

Countess of Lathom is a good variety, and may be best described as an improved Venus, but not in keeping with Duchess of Westminster.

Mr. Sydenham's experience with the variety Colonist must be exceptional. As grown by me at The Grange Gardens, it is one of the best, most reliable in every way, being very large and free-flowering. In colour it is rose-lilac, and instead of growing fifty seeds I have to content myself with twenty-one. The best vase of this variety I have seen was shown at the Royal Aquarium last year by Mr. F. J. Clark, gr. to Mark Firth, Esq., Wistow Hall, Leicester, in the class for twenty-four distinct varieties. The same gentleman showed Emily Henderson in grand form, and which I will mention presently.

Lord Kenyon and Prince of Wales are two grand and perfectly distinct varieties. Mr. Sydenham thinks Mrs. Dugdale is not required with Royal Rose. Perhaps not; but in my opinion they are both excellent varieties, and the former the better of the two. I have never found anything deformed about it.

Mr. Sydenham would substitute Lady Ormsby Gore for Mrs. Eckford. In colour the former has nothing at all to do with Mrs. Eckford—at least, as grown here. Lady Ormsby Gore is a charming variety, large, good grower, and grand constitution; pale buff in colour, overlaid with the most delicate pink.

For Othello Mr. Sydenham would substitute Black Knight. The former he considers a dull colour to that of Black Knight. Well, my views are exactly the reverse. Black Knight is truly a sombre-looking as its name implies; a grand Pea undoubtedly, but in my opinion Othello is much the brighter of the two, being equally large and free-flowering. In colour it is a chocolate red, self-coloured flower, a colour not before attained.

Mr. R. Sydenham commits himself in details regarding the varieties Othello and Black Knight. He looks upon Othello as dull in colour compared with Black Knight. Then he goes on to say that Black Knight is one of the most telling dark varieties that is exhibited in a stand of twelve, eighteen, or twenty-four varieties. I am perfectly sensible to the fact. It still remains a very dull colour as compared with Othello. Regarding the variety known as Lovely, it is well named; while Prima Donna is also a lovely variety.

Mr. R. Sydenham seems surprised that I have left out Sadie Burpee and put in Emily Henderson. My reason for doing so is this: I am unable to grow Sadie Burpee to my mind; in other words, I have never managed to produce it in its true character. I therefore decided to have it out of my selection, as I would not like to recommend to my friends what I cannot grow myself, and in Emily Henderson I think I gave a good substitute. As it is known to me, Emily Henderson is a grand outstanding variety, and very popular indeed.

In Blanche Burpee I think we have without doubt the largest white Sweet Pea, but I am not prepared to say it is the best white. W. Simpson.

taking place quite late in the summer, when the Peaches, &c., have been standing in the open air for some weeks. This method of fruit-tree cultivation enables the gardener to obtain two crops of dissimilar fruits in the course of the year in one and the same house; and it presents no difficulties beyond providing the necessary labour required for shifting the plants, affording water, &c. When we saw the house in the middle of October of last year, the crop of Plums

We are informed by a correspondent that the Peach, Nectarine and Plum-trees formed a picture of great beauty in the orchard-houses at the time the blossoms opened this spring.

HORTICULTURAL SUNDRIES.

It is a moot question if the business of a dealer in all sorts of articles needed by a gardener in his calling had its counterpart a



FIG. 61.—VIEW OF RIPENING PLUMS IN THE ORCHARD-HOUSE AT GUNNERSBURY HOUSE GARDENS.

THE ORCHARD-HOUSE, GUNNERSBURY HOUSE, ACTON.

THIS building fulfils two purposes during the course of the year, that of providing Peaches and Nectarines in the first week of May, whilst later it is devoted to Plums. The trees are grown in pots, and the Peaches and Nectarines are moved into the house in December, the course of treatment being that of an early forcing-house, the heating apparatus being equal to the maintenance of the required degree of warmth, and consisting of several rows of pipes running along the sides and two on the floor of the house.

The Plum-crop is not required till late in the autumn, and the trees are kept in the open air, protection being afforded them when in bloom; their removal to the orchard-house

generally was ripe, and good examples of fine flavour were noted of Grand Duke, Transparent Gage, an attractive and delicious fruit of a rich yellow tint; Coc's Red Drop, of the same sort of flavour as the Golden Drop, but not then quite ripe; as was likewise Rivers' Late, a fruit of a fine yellow tint; Ickworth Imperatrice, which Mr. J. Hudson, the head gardener, said should not be eaten till it shrivels; Reine Claude de Bavay, one of the finest Gage Plums; and Decaisne, a useful late green-fruited variety. The range is continued beyond that portion set apart for Plums, and seen in the illustration (fig. 61): one division having the borders planted with Cherry-trees, Plum and Pear-trees in pots, being stood in it late in the summer in order to bring their fruits to perfection without artificial heat.

quarter of a century ago. Dealers in pots and garden crockery-ware, in bast mats, in sand and soils, and Pea and Bean sticks, in Birch and heather-brooms we had; also tool merchants, and people who supplied mowing machines and rollers, spray pumps and garden engines; but the wit of the business man had not as yet evolved the garden sundriesman.

It was with a feeling of considerable curiosity, not unmixed with doubt, if enough material would be forthcoming on visiting Mr. G. H. Richards' wholesale emporium, No. 234, Borough High Street, London, S.E., to concoct a readable article, and whether we have succeeded in so doing we must leave to the opinion of the reader.

The view of the exterior of the business premises indicated exactly the wholesale dealer, which indeed the proprietor professes

to be, and admittance was only to be obtained by ringing the door-bell. This was answered by a clerk from an office above the ground floor. In this spacious room there was little to be seen; but it is the proprietor's intention to make a "show" shortly with some of his more attractive goods. An ascent to the office where half a dozen clerks were employed, then a short delay, and we were taken in hand by Mr. Richards himself, and piloted through a very extensive lot of large and small rooms and cellars, filled from floor to ceiling with an extraordinary lot of goods as it has ever been our good fortune to find in any one business house. One stock-room was filled with wreaths of everlasting, Xeranthemums, Helichrysms, &c., the so-called Cape flowers, stored in cardboard boxes. Other artificial flowers were there for the making of funeral wreaths and other devices, and their destination, we were told, is chiefly the Midlands, very few of such articles finding a sale elsewhere in the country. They come mostly from Italy, Austria, and Germany, and must represent a considerable sum of money annually expended with those countries.

Then came into view that most useful garden article, the Sussex trug (German *trug*, a basket), made of Ash, very strong and very light; of a variety of sizes, from that having the capacity of a bushel measure to tiny toy sizes for children's use; then Willow ware, including sieves and half-sieves, now made of the imperial bushel and half-bushel sizes, although still retaining the old designations. Dried and dyed Italian grasses occupied a large amount of space; then came a room piled round with shovels, spades, trowels, reels upon which to wind garden-lines, &c.

Skelton seemed to be the favourite maker of spades, and we remarked a capital nursery tree-lifting spade, of which the "strap" reached almost the whole length of the handle from the tread to the grip, obviously a heavy tool, but stronger than that usually found in the hands of the gardener or nurseryman's labourer. Of raffia, we expected to see large quantities, but not in tens of tons, forming square piles of bales of 2 cwt. (probably 100 kilogs.) each, these were the samples of several hundred tons warehoused at the docks. Much of this material seemed to be of the finest light coloured, silky, tough quality capable of minute sub-division, and yet be strong and effective for a year or longer, even when employed out of doors.

We believe the trade in raffia in Madagascar is almost entirely in Mr. RICHARDS' hands.

The far-famed Richards' XL-All occupied a large store to itself, and was found in large carboys and glass bottles of various sizes. A wide table runs down the middle of the room, admitting of two rows of packers to work readily without confusion. The smallest bottle sold contains enough liquid to vaporise 1,000 cubic feet. The little apparatus that is used in the vaporisation being made of sheet-iron galvanised is less costly than those of brass and block-tin, and serves its purpose similarly. The preparation is a little more costly than others in the market; still, gardeners and horticulturists generally find it a very safe and effective means of ridding plants of insects. So poisonous a substance needs to be duly labelled, to prevent accident as far as possible.

A little lot of bouquet-wire, about 2 tons in weight, was stored in this room; and it did not take up many superficial feet. We were shown contrivances made of wire which enable the bouquet-maker to place the flowers and greenery in that loose and graceful

manner we all like to see, which is so difficult of performance when moss and wadding are used in the heart of the bouquet. Persons unaccustomed to the making of bouquets will find these contrivances of great use, and also a saving of time. The forms are various, and include the so-called shower-bouquet.

Flower-sticks form a most important part of the stock, and consist of deal, painted and unpainted, mostly made on the Continent, because of the cheapness of manufacture; of Bamboo, in great variety of lengths, from 2½ feet in length to 10 or 12 feet, first-class material, and very enduring; and with ordinary care outlasting hazel, ash, and deal by several years. When out of use, Bamboo-rods should be tied in bundles, and be kept in a cool, dry place.

Excellent, strongly made pot-hangers, taking 48's and 32's, for use in hothouses, were noted, the suspending arm so bent as to keep the pot level, very different from the extemporised article in use in gardens. The basement of the warehouse was stored with Bedfordshire silver-sand, artificial manures in variety, Russian mats, syringes, and garden pumps and engines, and great quantities of Orchid-peat, for which the proprietor is celebrated. The peat is cut in blocks of about 18 inches long and 6 inches square, and is sun-dried before being brought into store. It contains but little sand or soil, and is the best obtainable, coming, we understood, from Dorsetshire. Wood-wool is now largely used by gardeners in the packing of fruit, having displaced moss, and great bales of it in various grades of fineness and quality were observed. As a material for packing fruit, the odourless "wool" (shavings) of the Aspen is obtained from Sweden; and a slightly coarser kind, manufactured from deal, is good for packing some things not spoiled by the slight odour of turpentine.

We remarked some exhibitors' vases for holding flowers, made of the so-called Danesby ware, a vitrified product, not unlike that made from slag, but of a different colour, having brown tints instead of violet, blue, &c. These vases are made in a variety of sizes, from that intended for a buttonhole to those of 2 feet in height, to accommodate long-stalked flowers. There are likewise embossed and engraved vases and tazzas, for standing in florists' shop windows; quassia chips, and sulphur in barrels of 2 cwt. each; collapsible boxes for wreaths, &c., for sending through the post. These can be opened out, and packed in numbers together in bundles for transit, and thus occupy but a small amount of space. A box of this sort is put together in a moment by means of white metal clips. These boxes seemed better adapted for packing in crates than for sending singly by post or rail. We have not the space to do more than mention a few of the multitudinous and varied contents of this Borough Road warehouse and that near the Shot Tower in the same district, viz., Weed Killer, Dried French Moss, in small crates of 100 bundles, each neatly bound round with paper—we should have been more gratified had it been English; shading materials of all sorts, artificial flower wreaths; 400 gross of Strawberry punnets, the forerunners of a much larger quantity soon to be brought in; more raffia (about eight tons), propagating, seed, and cutting boxes, such as those in which the Covent Garden growers and sellers dispose of bedding plants, Musk, annuals, &c. Here can the grower come and buy his boxes for a trifling sum, ready to his hand and suitable for every purpose. The florist can also obtain his fancy basket wares,

both coloured and plain, culled from Austria, Bavaria, and France; and the gardener, much plagued by birds, can find his needs in the matter of netting met to a nicety, the netting being strong and good, and all of it tanned, so as to increase its durability; of cork, a great store; white china ware, patronised by town florists, of which there are about seventy different patterns from which to choose; and lastly, and most incongruously as we thought in such a place, innumerable Birch-bark crosses for putting at the head of graves, and much in use in the Midlands.

CULTURAL MEMORANDUM.

EUPHORBIA (POINSETTIAS).

OLD plants which have for some weeks been resting on their sides in a dry and cool position may now be placed in a house and kept on a shelf, or, at any rate, near the glass in a temperature of about 55° as a minimum; the old growth being shortened back to a point where it assumes a woody condition, it being from below this point that the shoots best fitted for the making of cuttings are formed. I do not advise the raising of plants from portions of the stem cut up into eyes, as those from natural breaks on the older portions of stem are much to be preferred if they are given plenty of time in a very moderate temperature, rather than being submitted to a higher temperature later on. At the first no water at the roots is necessary, but the plants may be freely syringed twice a day, and the house closed early. A really light position is necessary for the production of good cuttings.

EUPHORBIA JACQUINLEFLORA.

Plants which have not been dried off or subjected to the cool conditions recommended for the foregoing, will have now formed shoots fit for cuttings, which may be taken off with a heel of the old wood, using a very sandy soil, and placing them in a close propagating-case. This plant enjoys a long season of growth, and does best when planted-out in narrow borders in a stove where the growths can be trained near to the roof.

GLOXINIAS

that were started in small pots shift into larger ones; and put *Achimenes* started in boxes or pans into the pots, pans, or baskets in which they are to flower. *J. C. Tallack.*

SOUTH AFRICA.

FLOWERING PLANTS AND FLOWERS AT CAPE TOWN.

Your remark on the Sea Point Flower Show in your issue of December 21, 1901, was seasonable. Exotics in the gardens of the Cape Peninsula are the order of the day. No amateurs have native plants, so far as I have seen, in their gardens; they are considered common. Two days in the week the blacks and off-coloured Cape natives range themselves in Cape Town, opposite the Standard Bank, with cut native flowers on sale, and beyond this it may be doubted if those whose business has brought them to stay, or make a temporary home, know much of the rich flora of the Cape Peninsula. Permits are issued to the flower sellers to cut wild flowers, and they are strictly enjoined not to pull up roots, and so

far as the bulbous plants are concerned this is all right; but I fear the heaths have a bad time of it, unless they are aged and deep-rooted. One fruitful cause of the destruction of the native flora is the bush fires, thanks to the invention of lucifer matches; when the pipe is lighted the burning match is thrown amongst the scrub, and being dry is soon ablaze, and great tracts of land are covered with flames. Another cause, no doubt, is the number of broken bottles scattered where "pick-nickers" have been, the hot sun playing on the glass produce fires. The Government do the best they can to minimise the evils. For the present no permits are given to gather flowers on Table Mountain. Were the good and clever Dr. Harvey to visit the early scenes of his botanical work around Cape Town, he would find fewer species, and this will continue, as the town keeps creeping up the sides of Table Mountain and the Lion's Rump. The Right Hon. Cecil J. Rhodes has acquired large properties on the Rose Bank side of Table Mountain, and has made a splendid carriage drive through his property, and throwing the whole of his grounds open to the public, adding, "Make use of it, and protect it, as it is yours." From this the public have concluded it is Mr. Rhodes' intention to transfer this property to Cape Town as a public recreation ground. *Peter Barr, V.M.H.*

HOME CORRESPONDENCE.

EARLY FLOWERING PLANTS IN CANON ELLA-COMBE'S GARDEN.—One is often asked for names of early-flowering hardy plants, and it is at such gardens as the Rev. Canon Ella-combe's at Bitton, in Gloucestershire, that we may learn them. For considerably over half a century hardy plants have been collected and cared for at Bitton, and in no other garden have I seen such beautiful clumps of hardy Cyclamen, some of which grow on the lawn at the foot of large trees, and others in a most natural way in the borders. C. Coum, with its glossy green leaves and bright red flowers, produced in hundreds, has been in flower since early February; C. neapolitanum flowers in early autumn, and is followed by beautifully mottled foliage, which it retains throughout the winter—fine old plants of this are in the Bitton Garden. In a rather hurried walk round the garden on March 11, I noted amongst others the following plants in flower:—*Anemone blanda*, *A. stellata*, *A. hortensis* var. *fulgens*, and *A. Hepatica* in variety; *Petasites nivea*; *Narcissus minor*, and its variety *minimus*; *Iris reticulata*, *I. stylosa*, and varieties *alba* and *speciosa*; *Corydalis rutae-folius*, *C. Kolpakowskiana*; *Daphne odora* (indica) *rubra*, this is quite hardy at Bitton, the specimen is a large and healthy one, every shoot of which has a cluster of flowers; *Daphne Blagayana*; *Saxifraga ciliata*, perhaps the prettiest of the *Megasea* section, it has hair-fringed leaves, and close set spikes of delicate pink flowers; *Erythronium grandiflorum*, *E. dens-canis*; *Sisyrinchium grandiflorum*; *Crocus imperati*, *C. versicolor*, *C. vernus*; *Draba athoa*, with bright green rosettes of leaves, and yellow flowers; *Scopolia carniolica*, and variety *concolor*; *Chionodoxa Lucilæ* and *Sardensis*; *Helleborus punctatus*, *H. atro-purpureus*, and several other varieties of *Lenten Rose*; *Leucojum vernum* var. *carpatium*; *Azalea precox*; and *Erica carnea*, in large masses full of flower. *J. Milburn, Botanic Garden, Bath.*

IRIS RETICULATA MAJOR.—Plants of this variety, and the type, have been flowering very well here in the rockery. The bulbs were planted last year. As I have noticed various views expressed as to the distinct character of the variety *major*, it may be interesting if I compare the two grown in these gardens. There is certainly a difference in

the size of the flower, and in height, as well as in growth; but scarcely more so than one would expect from the difference to be noticed in the size of the bulbs when they were planted. Certainly the flowers of *I. r. major* were nothing like the "double size" claimed for it. If one can only keep the bulbs of both in good condition over another year, the comparison will have more value. The "major" form, for some reason or other, not explicable by position, was a few days earlier than the type, and its scent appears to be stronger. *J. C. Tallack, Shipley Hall Gardens.*

RETARDING PLANTS.—I have been much interested with your correspondent's cultural directions of retarded roots and plants, especially in his concluding remarks about *Azalea mollis*, and the lasting qualities of the flowers, but which I found to be totally the reverse. A dozen plants which I had direct from the late Mr. Rochford during July of last year, when received I potted up and put into a plant-stove temperature, and within a fortnight, without any sign of flagging, all the flowers were well developed. When put into the mansion they lasted quite three weeks without in the least becoming unsightly. I now would like my naturally-grown plants to last the same length of time, but find instead of three weeks they last but ten days. I think where a good many fail in growing retarded plants of all kinds is through not buying from a trustworthy source; secondly, from careless management, leaving the plants lying about before potting, and not affording enough water. *A. Young, The Gardens, Hinton Admiral, Christchurch, Hants.*

THE OLD AND THE NEW.—In an interesting letter I have just received from Mr. J. Melndoe, of Hutton Hall Gardens, he laments that though "during the past twenty-one years he has on several occasions sent samples of his best seedling Melons to the meetings of the Royal Horticultural Society, he has never had the good fortune to obtain recognition of one of them." Does the confinement necessary in the case of a long journey rob the fruit of its aroma and flavour? I submit this point, because I am aware that several of Mr. Melndoe's seedling Melons more than hold their own at the great provincial shows. In proof of this, I may state that at the great fruit show held in Glasgow last September the 1st prizes in the Melon classes went as follows:—1st prize, green-flesh, Melndoe's Best-of-All; 1st prize, scarlet-flesh, Melndoe's Scarlet Premier. Both of these were distributed by Mr. Melndoe twenty years ago! *R. D.*

TOMATO DISEASE (CLADOSPORIUM LYCOPERSICI).—This fatal disease is one that is now occupying the minds of many market growers and gardeners in private places, as this pest too often makes all the difference between a profitable crop and a failure. Many remedies have been put forth from time to time, with varying degrees of success, but prevention is better than cure. Noticing correspondence on the subject in these pages recently, I venture to give my experience with regard to this disease. "E. B.'s" advice respecting plants employed for seeding purposes, to grow them in the open air and without animal manure, seems to go far towards solving the problem. In a garden in Sussex, where over 4,000 Tomato-plants were cultivated annually under glass for several years, Tomato disease was non-existent the first year; the second year it appeared in a mild form, about 3 per cent. of the plants were affected by it; the third year it had increased to about 10 per cent., and then, it was time to become alarmed, so I then (during the next winter) removed the soil from the borders, wheeling it to the further end of the garden, and replaced by new; and the walls were lime-washed. These measures proved successful, no disease appeared, and a heavy crop of fruit was gathered. No animal manure of any kind was used in the soil, but the soil, when the plants were carrying a good number of fruits, was dressed

with charred garden refuse. Experience teaches that the removal of the soil, which has carried several crops of Tomatos, reduces the risks of the disease attacking the plants. The lack of ventilation favours the spread of the disease, and although the plants may look well, they lack the vitality to enable them to resist attacks. I now grow about 200 Tomato-plants every year, but the disease seldom infests them. All are grown in the open air, and the soil is kept dryish. A remarkable fact I noticed last season was, that where Tomatos were planted in ground that had not been recently dug, the crop was heavier and the roots came nearer the surface, and were as a consequence, in a drier medium than those planted in ground recently dug. This (in my opinion) again goes to show that dryness is not injurious, but rather the reverse. An instance of the good effects of a dry soil came under my notice in Cape Colony, where large quantities are grown, and those that were irrigated regularly, and rather freely, produced long-jointed shoots and a light crop of fruit, while chance seedlings that escaped irrigation gave better crops. *J. M. Miles, Isleworth.*

CO-OPERATION AND CO-ORDINATION.—May I ask you for space to lay the following suggestions before your readers. The great growth of the past century indicates that co-operation and co-ordination are especially needed in things agricultural. Co-ordination is lacking not because of the innate dislike of people to co-operate, not because of jealousy between societies and associations, but chiefly because of the lack of opportunities of learning what others are doing. Taking the subject of village industries, for instance, it is most difficult to get definite information either as to what is being done in certain localities, or where special industries flourish. Again, there are many possibilities for the promotion and establishment both of the lighter branches of agriculture and of many of the rural industries in villages and districts, but the individuals who have the will to start them, either have not the power, the training, or the knowledge to see the possibilities within their reach. This lack of training and knowledge of course reacts upon the rural population, and contributes to the rural depopulation. Then, again, many local industries are cramped through not being more widely known, and many an individual started upon an independent career suffers through lack of a market; thus associations and individuals need the stimulus of friendly competition and mutual co-operation. It is proposed to hold a Conference at Warwick Castle on May 1 next, to provide an opportunity:—(1.) For those directly engaged in any other lighter branches of agriculture or rural industries to make known their work. (2.) For those who are interested in the things pertaining to the welfare of our country districts to learn what is being done to stay the rural depopulation. (3.) For an interchange of ideas and sympathetic suggestions between those engaged in allied industries. (4.) For those who need teachers or trained workers to meet those who are fully trained and capable of teaching others. (5.) For the binding of all these in one strong organisation for co-operation and co-ordination. It is therefore hoped any who are interested in the objects for which the conference is called, and who wish to learn fuller details of the programme of the discussion, as also of the hospitality to be offered for the occasion, will write for particulars to the Warden, Lady Warwick Hostel, Reading, or to myself. *Frances Evelyn Warwick, Warwick Castle.*

LILIUM GIGANTEUM.—It would be a pity if amateurs should be deterred from trying to grow this fine plant because it is said in a note on p. 181 to be unsuitable for most English gardens. Thirty years ago I was told by an eye-witness that this Lily had become almost naturalised in two gardens so widely separated as that of Merton Hall in the south of Norfolk, and Gordon Castle in the Highlands, near the mouth of the Spey, coming to maturity

freely in both of them from self-sown seed. Here, twelve miles south of Chester, I have done very well with it for nearly thirty years, and am able to keep quite as many as I want. We are very liable to sharp frosts late in spring, but I never saw the effects mentioned by Mr. Mallett. As the soil here is stiff brick clay, nearly all my flower-beds are filled with artificial soil to a depth of 2 or 3 feet, and *L. giganteum* thrives in any of them, though I have no doubt that it prefers a sheltered and rather shady situation. It is in fact almost the only Lily which I can grow to my satisfaction. It ripens seed late in October, and the seed comes up sparingly if sown broad-cast in the open soil, taking about eight years to mature. As for the *Crinum* which Mr. Mallett disparages as not hardy, it is certainly of no use trying them here; but my friend, Mr. E. Woodall, used to grow them well in his open borders at Scarborough. He once gave me a fine flowering bulb of *Crinum Powellii* album. I followed his instructions as to soil, but it never flowered with me, and when it was reduced to half its size, I returned it to him, and it soon recovered, and flowered well. C. Wolley Dod, Edge Hall, Malpas.

I hope that Mr. Mallett will not succeed in convincing his readers that *Lilium giganteum* can only be grown successfully out-of-doors in the south-west of England. He affirms that it "will not thrive so well under the best possible conditions found north of the Thames, as it would do south of that boundary." He says it is necessary to remember that there are gardens in Caithness as well as in Cornwall. Yes, and all the way between; perhaps I may put in a word for a locality midway between these extremes. In the south-west of Scotland, where we are by no means exempt from late frosts (I have seen the thermometer down to 20° Fahr. on May 20), *Lilium giganteum* has grown and flowered for more than thirty years in the open border at Monreith, without any protection whatever. Herbert Maxwell.

Obituary.

ROBERT MANNING.—We greatly regret to hear of the death of one of our old correspondents, Mr. Robert Manning, the librarian of the Massachusetts Horticultural Society. He had the interests of the library at heart as we know. He was a native-born American; born at Salem in 1827, and died suddenly, at Boston, on Feb. 17.

MR. TRUSSLER.—There died on Thursday, March 13, 1902, aged seventy-nine years, Mr. Trussler, a retired nurseryman, and native of Farnham, Surrey. He started nursery work at Messrs. Chas. Lee & Sons, Hammersmith, and was subsequently at Sharman's, of Brompton, S.W., later at Messrs. Weeks, Chelsea, now Mr. W. Bull's; and lastly, before starting on his own account, he was manager of the now defunct Royal Nursery of Messrs. Catlough's at Feltham.

PETER ROOKE.—We regret to see the announcement of the death, in his ninety-fourth year, at Weybridge, of a very old correspondent of this journal. His collection of hardy Ferns was remarkable.

JOHN ORD MACKENZIE.—The death at Dolphinton, Lanarkshire, of this gentleman, in his ninety-first year, is announced. He was a large exhibitor at the Conifer Conference, and an occasional correspondent of this journal.

W. H. POWNALL.—We regret to learn from the *Journal of Horticulture* of the death of this greatly respected gardener at Lenton, Notts, on March 3. Mr. Pownall was a frequent contributor to the *Journal*, by whose staff he was held in the highest esteem.

SOCIETIES.

ROYAL HORTICULTURAL. Scientific Committee.

MARCH 11.—*Present*: A. D. Michael, Esq., in the Chair; Rev. W. Wilks, C. H. Hooper, J. W. Odell, E. M. Holmes, W. C. Worsdell, G. S. Saunders, F. J. Baker, A. Worsley; Drs. H. Müller, A. B. Rendle, M. C. Cooke, and M. T. Masters.

Burr on Pavia sp.—Mr. ODELL reported that he had been unable to find any mites on the specimen exhibited at the last meeting.

Clematis glycinoides.—Mr. ODELL also exhibited a flowering specimen of this Australian species.

Insects on Apple Shoots.—Mr. HOOPER brought shoots, supposed to have been attacked by insects, which were referred to Mr. Saunders for report. That gentleman, as we since learn, is unable to pronounce a definite opinion on the subject.

Unhealthy Palms.—A firm of nurserymen sent six pots of Kentias for the opinion of the Committee. They were referred to Mr. Odell for examination and report. Mr. Odell has since reported that he finds no fungus on the living plants, and considers the malady to be constitutional. Some fungus spawn was found in the soil growing on the fragments of decayed wood.

Bicolored Cyclamen.—From the gardens, Sandhurst, Runfold, Farnham, came a plant of *Cyclamen latifolium*, with white and rosy flowers originating from the same tuber. Dr. Masters commented on the interest of the specimen, as showing an instance of variation uninfluenced by hybridisation.

Slime-fungus.—Dr. COOKE reported on the leaves of an unknown plant, submitted to the last meeting. The leaves were covered superficially with pink splashes of a chalky-looking nature, upon which, here and there, were small gyrose nodules, not larger than a Rape-seed, of pitch-brown colour. All this flaked off easily, and left the plant green, and uninjured. The brown portion consisted of a mass of subglobose spores of a brownish-violet colour, evidently belonging to some slime-fungus or Myxogaster. Being unable to identify the species, he sent it to Mr. Geo. Masee, who has published a monograph of this group, and this is his reply:—"The substance is undoubtedly the plasmodium of some Myxomycete, but of what species I cannot say. It is quite superficial, and would do no harm to the plant it occurred upon."

Papalanthus sp.—Mr. E. M. HOLMES showed a species of *Papalanthus* (nat. ord. Eriocaulaceae), nearly allied to *P. elegans* and *P. niveus*, which is used in the district where it grows, on the banks of the Amazon, for decorative purposes. The white persistent dry bracts of the involucre give it the appearance of a *Helichrysum*. Its long, slender, pliable stalks render it useful for a variety of decorative purposes.

Jujube.—Mr. HOLMES also exhibited specimens of a large variety of *Zizyphus jujuba* cultivated in China, and preserved as a sweetmeat. The preserved fruits are about the size of Dates, but broader, and flatter, and have a striated surface. According to Sir THOS. HANBURY, from whom they were received, the Chinese call them Meih-Tsau, or honey Jujube, and prepare them by making longitudinal incisions in the fruit with a knife, and then plunge the fruit into honey, subsequently drying it. It is prepared in Hunge Chow, the district that yields the best green Tea. The preserved fruit forms an excellent article for dessert, and it is surprising that it has not hitherto been imported for that purpose into Great Britain. Bretschneider, in the *Botanicon Sinicum*, ii., p. 119, No. 278, under Ta Tsao (great Jujube), quotes the following from the Chinese writer, Kuo Po:—"There is now in Ho-tung, in I-shi-hien (South-western Shansi), a kind of Tsao of the size of a hen's egg," and explains that this is probably the large Jujube now produced chiefly in Shan-tung, which the Chinese preserve with honey or sugar, and which is sold at Peking under the name of meih-Tsau (honey-Jujube).

Gall on the Root of the Logan Berry.—From Mr. HOLLAND, Malvern, a hard, rounded gall was shown on the roots of this plant, which is a hybrid between a Raspberry and a Blackberry. Mr. Saunders pointed out its resemblance to the root gall of the Raspberry, attributed to eelworms, but he has been unable to find any trace of eelworm in the specimen exhibited.

Carnation Disease.—Dr. COOKE reported on various specimens submitted to him by Dr. MASTERS, in which he had failed to find fungus or bacteria. [Since the

meeting, Dr. COOKE has examined other specimens, and finds them affected with a new species of *Glaeosporium*. See p. 193.]

Seed-vessels of Arauja sericifera (Physianthus albus).—Some follicles of this plant were sent by Mr. Pentland, the gardens, Ashwick Hall, Marshfield, Gloucestershire. The plant is an Asclepiad, the fruits of which are illustrated in the *Gardeners' Chronicle*, 1893, vol. xiv., p. 436. The plant from which these specimens were taken bore scores of fruits, the result of fertilisation through the medium of insects.

Hazel Buds affected with Mites.—Mr. R. W. DEAN sent specimens of buds distorted in the same manner as the buds of the Black Currant. The occurrence of these buds in the Hazel and Filbert was known long before the appearance of the Currant Bud-mite.

Eranthe crocata poisonous to Cattle.—Mr. HOLMES showed tubers of this plant thrown up on the sides of a ditch, where they had been eaten by cattle with fatal results, the symptoms being similar to those of poisoning by strychnine.

Seedling Ailanthus bearing Flowers.—Dr. MASTERS showed specimens he had received from Mr. Dinter, German S.W. Africa, which were interesting as bearing flowers, whilst the cotyledons were still attached, and the whole plant was not more than 2 or 3 ins. in height. Dr. Masters recalled a similar production of flowers on a small shoot proceeding from a sucker of the same tree, and also the formation of perfect flowers on some seedling plants of *Philadelphus*, when only 2 to 3 ins. in height.

Pinus pindica (?).—Dr. MASTERS showed cones, received under this name, from Mr. Oscar Bierbach, of the Botanic Garden, Belgrade. The tree is reported to be a native of the mountains of Thessaly. No foliage was sent, but the cones have the appearance of those of a variety of *P. Laricio*, but much more tapering in form than is usually the case in that species.

CROYDON AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT.

MARCH 4.—There was an excellent meeting in the Society's room at the Sunflower Temperance Hotel on the above date, when Mr. M. E. Mills presided. Mr. W. Beale, gr. at Hayes Place, Hayes, gave an interesting paper on "*Begonia Gloire de Lorraine*," and handed round the room some leaves showing the advantage of propagating from leaves. A discussion followed the reading of the paper. "*Caladiums*" will be the subject on March 18. J. G.

BECKENHAM HORTICULTURAL.

MARCH 14.—There was a good attendance to hear Prof. J. Percival, M.A., F.L.S., deliver a lecture on "The Improvement of Plants by Selection and Hybridisation." In respect to sports, the lecturer said that only those plants which had been introduced and established a number of years were liable to sport, e.g., Peach produce Nectarines, Gooseberries, fruits of an entirely different colour, &c. The only way to perpetuate a sport was to cut the shoot or branch up, and propagate from it; seed was of no use. The most successful plant-raisers of the past had devoted themselves entirely to one class of plants. The differences produced by soils, manuring, watering, aspect, &c., often cause marked difference in plants, but such changes are not permanent. Examples given of "selection" were the Student Parsnip, which originated from the wild Parsnip; and the Carrot, which was transformed by Vilmorin in eight generations from its wild state as an annual with a long, thin root into a biennial by late sowing and careful selection.

NATIONAL CARNATION & PICOTEE.

The twenty-fifth annual Report, now before us, exhibits the affairs of this Society in a flourishing condition. Allusion is made to the unfavourable circumstances under which the show of last year was held, the great heat materially affecting the flowers, and bringing them into bloom prematurely.

New varieties were not numerous, but First-class Certificates were awarded to Mrs. Guy Sebright, a light-rose-coloured self, shown by Mr. M. V. Charrington; Euryalus, a fine heavy-edged yellow-ground Picotee, shown by Mr. T. H. Delabere May; Lady Constance Butler, a promising yellow-ground fancy, shown by Mr. Edmund Charrington.

The exhibition for 1902 will take place under the auspices of the Royal Horticultural Society, on Tuesday, July 22, in the Drill Hall, Buckingham Gate, Westminster. The committee, while retaining the

divisions and number of classes, with the exception of one for tables, for which they have substituted bouquets, have deemed it necessary to curtail the number of prizes offered in the schedule for 1902. This has been rendered necessary by the loss of the Crystal Palace Company's donation of £50, and by the resignation of more members than usual during the past year. The receipts for the year 1901 amounted to £460 3s. 1d., the expenditure to £350 12s. 7d., and the balance in hand was £119 10s. 6d.

DEVON & EXETER GARDENERS'.

"ECCENTRICITIES in the Life of Plants," was the subject of a lecture at the last meeting of this Association, by Mr. HAROLD BAKER, an assistant in Messrs. Robert Veitch & Son's nursery at Exeter.

Mr. Baker gave many interesting instances of mimicry in plants, graphically describing how one plant intuitively usurped the appearance of another, or of its surroundings, sometimes for defence, and at other times in an aggressive and selfish manner. To illustrate his paper, he staged specimens of insectivorous and other plants, demonstrating to his audience the why and the wherefore of the eccentricities of many plants, or giving the probable reason for them.

MARKETS.

COVENT GARDEN, MARCH 20.

[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 revise the list, and 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 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.—AVERAGE WHOLESALE PRICES.

| s.d. s.d. | s.d. s.d. |
|---------------------------------------|---------------------------------------|
| Adiantums, doz. 5 0-7 0 | Ferns, small, per 100 4 0-6 0 |
| Arbor-vitæ, var., per dozen 6 0-36 0 | Flcus elastica, ea. 1 6-7 6 |
| Aspidistras, doz. 18 0-36 0 | Foliage plants, various, each 1 0-5 0 |
| — specimen, ea. 5 0-10 6 | Lily of Valley, ea. 1 9-3 0 |
| Cannas, per doz. 18 0— | Lycopodiums, p. dozen 3 0-4 0 |
| Crotons, per doz. 18 0-30 0 | Marguerites, per dozen 8 0-12 0 |
| Cyclamen, p. doz. 8 0-10 0 | Myrtles, per doz. 6 0-9 0 |
| Dracenas, var., per dozen 12 0-30 0 | Palms, var., each 1 0-15 0 |
| — viridis, doz. 9 0-18 0 | — specimen, ea. 21 0-63 0 |
| Eriocas, var., doz. 12 0-36 0 | Pelargoniums, scarlet, doz. 8 0-12 0 |
| Euonymus, var., per dozen 8 0-18 0 | — ivyleaf, per dozen 8 0-10 0 |
| Evergreens, var., per dozen 4 0-18 0 | Spiræas, per doz. 6 0-12 0 |
| Ferns, in variety, per dozen 4 0-18 0 | |

VEGETABLES.—AVERAGE WHOLESALE PRICES.

| s.d. s.d. | s.d. s.d. |
|-------------------------------------|--------------------------------------|
| Artichokes, Globe, per dozen 2 6— | Mint, new bunch 0 3-0 6 |
| — Jerusalem, p. sieve 1 0-1 8 | Mushrooms, house, per lb. 0 8— |
| Asparagus Sprue, bundle 0 9— | Onions, case 7 0-7 6 |
| — English 6 0— | — English, per ewt. 7 0-7 6 |
| — Giant 10 6-18 0 | — in bags 5 0-6 0 |
| — Paris Green 6 6— | — picklers, per sieve 2 6-3 6 |
| — Spanish 2 0— | Parsley, per doz. bunches 3 0-4 0 |
| Beans, dwf., house, per lb. 1 6— | — sieve 2 6-3 0 |
| — French, broad, flat 3 0— | Parsnips, p. cwt. bag 2 0-3 0 |
| — Madeira, per basket 2 0-3 0 | Peas in lb. bags 0 6— |
| Beetroots, per bushel 1 3-1 9 | — in flats 6 0-7 6 |
| Brussels Sprouts, sieve 1 0— | Potatoes, per ton. 50 0-90 0 |
| Cabbage, p. tally 3 6-5 0 | — new, per lb. 0 2 1/2— |
| Carrots, per doz. bunches 3 0-4 0 | — Frame, per lb. 0 5-0 6 |
| — washed, bags 3 0-3 6 | — new Teneriffe, per cwt. 14 0-16 0 |
| — unwashed, per bag 2 0-2 6 | Radishes, p. doz. bunches 1 0— |
| Cauliflowers, doz. 2 6— | Rhubarb, Yorks, per dozen 0 8-1 0 |
| — tall 4 0-10 0 | Salad, small, punnets, per doz. 1 3— |
| — Italian, bask. 2 0-3 0 | Savoy, tally 2 6— |
| Celeriac, per doz. 2 6— | Scotch Kale, bus. 1 6-2 0 |
| Celery, per dozen bunches 8 0-18 0 | Seakale, per doz. punnets 10 0-12 0 |
| Chicory, per lb. 0 3— | Shallots, per lb. 0 2— |
| Coleworts, bushel 1 0-1 6 | Spinach, English, bushel 3 0— |
| — bag 2 0-3 0 | — French, per crate 2 6— |
| Cress, per dozen punnets 1 3— | Stachys, lb. 0 3— |
| Cucumbers, doz. 3 0-5 0 | Tomatos, Canary, boxes 3 6-4 6 |
| Endive, new French, doz. 1 9-2 0 | Turnip-Tops, per bushel 1 0-2 0 |
| — Batavian, per dozen 1 9— | — bag 1 6-3 6 |
| Garlic, per lb. 0 3— | Turnips, per doz. bunches 1 6-2 0 |
| Horseradish, foreign, bunch 1 3-1 6 | — bag 2 0-2 8 |
| Leeks, 12 bunches 2 0-2 6 | Watercress, per doz. bunches 0 6-0 8 |
| Lettuces, Cos, doz. 5 0— | |
| — Cabbage, doz. 0 10-1 0 | |

FRUIT.—AVERAGE WHOLESALE PRICES.

| s.d. s.d. | s.d. s.d. |
|---|--|
| Apples, home-grown, Wellingtons, per bushel 6 0-10 0 | Grapes, Gros Colmar, A., p. lb. 3 0-4 0 |
| — Californian, cases 8 0-10 6 | — B., per lb. 2 0-2 6 |
| — Nova Scotian and Canadian, various, p. bbl. 20 0-30 0 | — Allcante, lb. 3 0-4 0 |
| — Large Cookers, per bushel 6 0-7 0 | — Almeida, per 12 lb. 6 0-8 0 |
| Bananas, bunch 6 0-9 0 | Lemons, per case 10 6-15 0 |
| — loose, p. doz. 1 0-1 6 | Oranges, Bitter, case 5 6-6 0 |
| Cape Fruit— | — Denia, case 11 0-35 0 |
| — Grapes, case 8 0-10 0 | — Navel, per case 12 0-14 0 |
| — Nectarines, case 10 0-12 0 | — Murcia, blood, case 5 6— |
| — Peaches 10 0-12 0 | — Tangierine, per case (100) 5 0-6 0 |
| — Pears 6 0-12 0 | Pears, Easter Bourré, in half cases & cases 7 6-15 0 |
| — Plums 9 0-12 0 | Pines, each 2 0-3 0 |
| Chestnuts, per bag 15 0— | Sapucaia Nuts, per lb. 1 0— |
| Cobnuts, Kentish, per lb. 1 0— | Strawberries, per lb. 3 0-6 0 |
| Cranberries, per case 12 0— | Walnuts, per bushel 16 0— |
| — quart 8 0— | |

REMARKS.—Some outdoor Rhubarb is now coming in, fetching 2s. to 3s. per dozen bundles; this is bound in a very different way to the Yorkshire Rhubarb. Grapefruits sell at 12s. 6d. per case. Apples all remain in price about the same. A few Cabbages are now coming in.

POTATOS.

Dunbar Main Crop, 90s.; Up-to-Date, 80s. to 85s.; Blacklands, 45s. to 50s.; various, 50s. to 80s. Seed in variety, prices on application. John Bath, 32 & 34, Wellington Street, Covent Garden.

SEEDS.

LONDON: March 19.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., state that the present favourable weather naturally causes a brisk sowing demand for farm seeds generally, as a result of which stocks are rapidly working down. Fine samples of new English red Cloverseed have become scarce, whilst there is no quotable alteration in either Alsike or white. Trefoil keeps specially firm, but Tares and Rye-grasses are dull. Lucerne is dearer, and much wanted; Sainfoin, however, continues cheap, whilst Cocksfoot shows a substantial advance. As regards bird seeds there is no fresh feature. Mustard and Rapeseed realise former terms. Linseed is steady. Scarlet Runner Beans are obtainable at very tempting rates; meantime, the trade doing in Peas and Haricots is confined to narrow limits. The Board of Trade Returns give the imports into the United Kingdom of Clover and grass seeds for February, 1902, as 44,547 cwt., value £82,248, as against 37,796 cwt., value £81,505, for the corresponding month of 1901.

FRUITS AND VEGETABLES.

LIVERPOOL: March 19.—Wholesale Vegetable Market.—Potatoes, per cwt.: Up-to-Date, 2s. 2d. to 2s. 8d.; Main Crop, 2s. 9d. to 4s.; Lynn Grays, 2s. to 2s. 4d.; Bruce, 2s. 2d. to 2s. 6d.; Turnips, Swedes, 1s. 4d. to 1s. 6d. per cwt.; Carrots, 3s. 6d. to 4s. 6d. do.; Onions, foreign, 5s. to 6s. 6d. do.; Parsley, 8d. to 10d. per twelve bunches; Cauliflowers, 1s. to 2s. 3d. per dozen; Cabbages 6d. to 1s. 4d. do.; Celery, 6d. to 1s. do. St. Johns: Potatoes, 1s. 6d. per peck; new do., 8d. per lb.; Grapes, English, 4s. 6d. per lb.; do., foreign, 6d. to 8d. do.; Pineapples, English, 3s. 6d. to 5s. each; Apples, 2d. to 4d. per lb.; Tomatoes, 6d. ditto; Asparagus, 1s. to 6s. per bundle; Cucumbers, 6d. each; Mushrooms, 1s. 4d. per lb. Birkenhead: Potatoes, 10d. to 1s. per peck; Grapes, English, 2s. to 4s. per lb.; do., foreign, 6d. to 10d. do.; Mushrooms, 1s. to 1s. 6d. per lb.; Filberts, 1s. do.

GLASGOW, March 19.—The following are the averages of the prices during the past week:—Apples, Newtown Californian, 9s. 6d. to 10s. 6d. per case; Nova Scotia Baldwins, 19s. to 24s. per barrel; Maine, 20s. to 24s. do.; Canadian, 23s. to 26s. do.; Oranges, Valencia, ordinary, 420's, 10s. to 11s. per box; do., large 420's, 12s. to 14s. do.; extra large do., 14s. to 19s. do.; large 714's, 12s. to 14s. do.; Californian Navel, 15s. to 18s. do.; Grapes, 1s. to 3s. 6d. per lb.; Mushrooms, 1s. do.; Onions, Valencia, 5s. 8s. to 9s. per box; do. Globes, 8s. 6d. do.; do., Dutch, 6s. 6d. do.

CORN.

AVERAGE PRICES OF British Corn (per Imperial qr.), for the week ending March 15, 1902, and for the corresponding period of 1901, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

| Description. | 1901. | 1902. | Difference. |
|---------------|-------|-------|-------------|
| | s. d. | s. d. | s. d. |
| Wheat | 25 9 | 27 1 | + 1 4 |
| Barley | 25 1 | 26 6 | + 1 5 |
| Oats | 17 7 | 20 6 | + 2 11 |

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period March 9 to March 15, 1902. Height above sea-level 24 feet.

| 1902. | DIRECTION OF WIND. | TEMPERATURE OF THE AIR. | | | | TEMPERATURE OF THE SOIL AT 9 A.M. | | | |
|----------------------|--------------------|-------------------------|-----------|----------|---------|-----------------------------------|-----------------|-----------------|------------------------------|
| | | At 9 A.M. | | DAY. | | At 1-foot deep. | | At 2-feet deep. | |
| | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. | At 1-foot deep. | At 2-feet deep. | At 4-feet deep. | LOWEST TEMPERATURE ON GRASS. |
| MARCH 9 TO MARCH 15. | | deg. | deg. | deg. | deg. | ins. | deg. | deg. | deg. |
| SUN. 9 | N.W. | 50° 9' | 44° 9' | 56° 1' | 44° 8' | 0° 07' | 43° 2' | 42° 3' | 43° 1' |
| MON. 10 | E.N.E. | 44° 9' | 44° 2' | 49° 3' | 44° 7' | ... | 45° 0' | 43° 2' | 43° 1' |
| TUES. 11 | S.S.E. | 44° 4' | 43° 4' | 49° 3' | 38° 5' | ... | 44° 2' | 43° 8' | 43° 1' |
| WED. 12 | S.S.E. | 44° 9' | 43° 6' | 53° 5' | 42° 0' | ... | 44° 4' | 43° 9' | 43° 7' |
| THU. 13 | S.S.E. | 46° 2' | 39° 7' | 56° 8' | 32° 3' | ... | 44° 1' | 44° 2' | 43° 25' |
| FRI. 14 | S.S.W. | 49° 3' | 45° 9' | 54° 6' | 35° 8' | 0° 51' | 44° 1' | 44° 3' | 44° 2' |
| SAT. 15 | W.N.W. | 47° 4' | 42° 5' | 52° 8' | 42° 1' | ... | 45° 2' | 44° 5' | 44° 2' |
| MEANS | ... | 46° 9' | 43° 5' | 53° 2' | 40° 0' | 0° 58' | 44° 3' | 43° 7' | 43° 7' |

Remarks.—The first part of the week was remarkable for dense, black fog; the latter part has been bright with the wind strong. A considerable quantity of rain fell on the 14th.

GENERAL OBSERVATIONS.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending March 15, is furnished from the Meteorological Office:—
"The weather during this week was somewhat rainy in all the more western and northern districts, although the daily measurements were small, but over the greater part of England it was generally dry until Friday, when considerable rain fell over all the more southern counties.

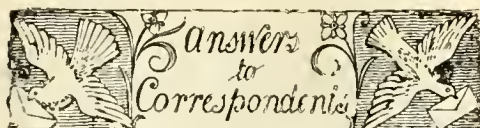
"The temperature was again above the mean, the excess ranging from 5° in England, S.W., and the Midland Counties, to 3° in Scotland. The highest of the maxima were registered on different days in various parts of the Kingdom; they ranged from 60° in England (at Southampton, on Sunday), to 54° in several of the north-western and northern districts. The lowest of the minima were recorded, as a rule, either on the 13th or 14th, and ranged from 27° in Scotland, N. and E., and 28° in England, S., to 35° in England, S.W., and Ireland, N., and to 36° in the Channel Islands.

"The rainfall exceeded the normal amount in Scotland, N. and W., the Midland Counties, and England, S., and just equalled the average in England, E. and S.W.; elsewhere the fall was again less than the mean.

"The bright sunshine was deficient in all districts excepting Scotland, N. The percentage of the possible duration ranged from 32 in England, S. and E., and 29 in Ireland, S., to 16 in England, S.W., and 15 in England, N.E. and N.W."

THE WEATHER IN WEST HERTS.

A REMARKABLY warm week for the middle of March! On the warmest day the temperature in the thermometer screen rose to 62°, a reading which has only once before in the last sixteen years been exceeded so early in the spring. The present warm spell has now lasted nearly a month, during which period there has been only one day or night which has been in any way cold for the time of year. The ground has become very warm, and is now 4° warmer at 2 feet deep, and 5° warmer at 1 foot deep than is seasonable. There was only one wet day during the week, and then nearly three-quarters of an inch fell, which is equivalent to a watering of over 3 gallons on each square yard of surface in my garden. Of this amount, about 2 gallons has since come through each of the percolation-gauges. Although the sun shone on two days for more than eight hours a day, yet the average duration of sunshine for the week was rather under the average for March, owing to the cloudy character of several other days. Strong winds blew from the W.N.W. on two days, but calm and light airs prevailed during the rest of the week. On the one wet day the atmosphere was very humid, otherwise the air continued exceptionally dry. An Early Rivers Peach, growing on a south wall in my garden, came into blossom on the 17th, which is exactly a week earlier than its average date of first flowering in the previous sixteen years, and nine days earlier than last year. E. M., Berkham, sted, March 18, 1902.



AERIAL ROOTS OF VINES: T. W. M. Caused by a too great amount of moisture in the vinery. Reduce the degree of moisture, and roots will cease to be put forth.

APPLE STOCKS: P. W. The Donein and French Paradise stocks answer for bushes and small trees; and for trees which have to be planted on shallow soils, or those which have water not far from the surface. For this climate, the English Paradise, broad-leaved Paradise and Nonsuch, are the best stocks for standard trees. Many nurserymen have their own select stock of these, which they raise from seed.

BOOKS: John Spencer. *Culture Forcée des Oignons à Fleurs*, par Jules Rudolph; and *L'Art de Bouturer*, par Adolphe Van den Heede. Obtainable at the Librairie et Imprimerie Horticole, 64 bis, Rue Grenelle, Paris; or through a foreign bookseller here.

"BRIGHT-BITS" ON YOUNG VINE SHOOTS: T. W. M. Kindly send specimens, otherwise we are unable to answer your query.

CYPRIPEDIUM: J. R., Firenze. Your *Cypripedium* bears a striking resemblance to *Cypripedium* × *orphanum*, which was supposed to be the result of a cross between *C. Druryi* and *C. barbatum*. Your flower is even pale for that variety, and therefore we think that the dark-coloured *C. × ananthum* is not one of the kinds used in its production.

DROPPING OF THE YOUNG FRUITS OF THE PEACH: T. F. The mishap may be due to the dryness of the soil during the winter—a very common cause, and often unsuspected by the gardener, owing to the moist appearance of the surface. Another probable cause is a very abundant crop of fruits. There is no mildew on the fruits sent.

BLOOD VARIETIES OF CACTUS DAHLIAS: Correspondent. Varieties of Cactus Dahlias that are free-flowering, which carry the flowers well above the leaves, are as follows, viz.:—Countess of Lonsdale, William Cuthbertson, Spitfire, Lady Pearson, Leadstone, Floradora, Dr. Nansen, and Rocket (Pompon Cactus).

MANURES FOR GARDEN SOIL: E. Jones. The analysis of air-dried soil being as follows: moisture, 1.11 per cent.; carbonaceous matter, 9.92 per cent.; nitrogen equivalent to ammonia, 0.35 per cent.; available phosphate, 0.087 per cent.; available potash 0.027 per cent. The best manure for general purposes for such soil as the above given is in quantities per acre as follows: superphosphate, 1 cwt.; nitrate of soda, 1½ cwt.; slacked lime, ½ cwt. Note, do not omit the lime from the mixture, as there is an excess of organic matter in the soil. J. J. Willis.

MICE: C. H. B. If your garden is very secluded, and there are no fowls about, you can lay poisoned (arsenic) grain about, which is a good means of ridding a place of mice. The dead bodies, we may remind you, may be eaten by your favourite cat. Cats and traps, after all, are the best destroyers.

ILLUSTRATIONS OF GROUPS OF ORCHIDS: T. W. M. Examples of such as have appeared in this Journal for the past ten or eleven years may perhaps be obtained of the publisher, if you specify your requirements.

INSECTS: C. S. The Bean-seeds are injured by the beetle shown in fig. 63. The eggs are laid as you suggest, on the young seed-vessel in the Bean-blossom. As the maggots hatch, they eat their way into the growing seeds, and remain in this closed tunnel during the chrysalis stage, and until the beetle eats its way out, leaving the little round holes you have observed. Do no

plant such injured seeds, nor seeds from which the beetles have not yet emerged. These may be identified upon examination by their possessing a little round, slightly discoloured depression. Destroy all such seeds and beetles. The insects from the vinery are those of the black Vine-weevil, shown in fig. 62, and one of the worst enemies to Vines and Strawberries. The eggs of this insect are laid just below the surface of the ground, and the maggots feed upon the roots of plants. The perfect beetles feed during the dark hours of night, and are greatly scared by a bright light.



FIG. 62.—BLACK VINE WEEVIL (*Otiorynchus sulcatus*) (much magnified).



FIG. 63.—BEAN WEEVIL (*Bruchus granarius*) (much magnified).

During the day they are hidden away in the cracks of the wall, or under clods of earth, boards, or other refuge, and as they have to get from these hiding places to the plants by foot (for they are wingless), you may possibly be able to place something that will prevent them from doing so.

NAMES OF PLANTS: *Oncid.* *Cattleya amethystoglossa*.—R. K. C. D. 1, *Polygala oppositifolia*; 2, *Clinanthus puniceus*; 3, *Acacia Ricana*.—W. T., *Harrogate*. A very fine *Odontoglossum Andersonianum*.—J. T., *Dartford*. 1, *Cattleya Trianaei delicata*; 2 and 3, forms of *Odontoglossum crispum*.—W. C., *Worthing*. 1, *Mackaya bella*; 2, *Cuculigo recurvata*; 3, *Megasea crassifolia*.—E. R. 1, A *Cypress*, perhaps *C. Govoniana*, send a cone; 2, *Sedum lydium*; 3, *Ballota* sp.; 4, *Orobis vernus*; 5, *Lonicera fragrantissima*; 6, *Saxifraga hypnoides*.—W. T. *Trachystemon orientale*, a Boraginaceous plant from the Levant. See *Gardeners' Chronicle*, July 3, 1880.—A. G. C. Send better specimens. 3, is *Berberis Darwini*.—C. H. C. *Cornus* mas.

ONCIDIUM JONESIANUM: *Crassinode*. The part of this plant which you refer to as "the bulbs" are the leaves. The pseudo-bulbs of this species are very rudimentary, and are attached to the rhizome after the large fleshy terete leaves fall. There is no *Oncidium* like it in growth bearing flowers such as you describe. The species which is imported with it, and is much like it in growth, is *Oncidium Cebolleti*, but that has upright spikes consisting of many yellow flowers. The only plant we can think of with growths and flowers such as you describe is *Leptotes bicolor* (*Tetramiera bicolor*), but it is a smaller grower, and much more tufted than *Oncidium Jonesianum*.

PRUNING EVERGREEN AND DECIDUOUS SHRUBS, ROSES: S. P. If the removal has been carefully performed, and there is little root disturbance, as for instance, when a large

compact mass of soil and roots is removed bodily, no pruning may be called for, unless it be the removal of long unripe shoots. On the contrary, if there is considerable root disturbance, together with mutilation of the same, some reduction of the top growth is necessary forthwith. It is a great assistance to abundantly apply water before the balls are quite covered over with earth; and later to syringe the tops night and morning till growth is well advanced, that is till June or later in the year. Climbing Roses should have all of the leading shoots cut back to one-half their length, doing this as soon as growth is renewed, and then cutting to strong buds; applying water and syringing as above.

RICHARDIA LEAVES: E. Smith. Scalded by sunshine whilst moist.

SEWAGE FARM CROPS: A. A. J. Italian Ryegrass. This plant is excellent for milch cows and cattle, and does well on sewage farms and irrigated land generally, but it smothers other grasses, and leaves the ground bare when it dies out, which is not the case with the perennial Ryegrass. No other green crop yields a larger amount of herbage. Roots, such as Turnips, Beet, Mangold Wurzel, Parsnips, and Carrots, would succeed, also Comfrey. We would advise you to study *Permanent and Temporary Pastures*, by Messrs. Sutton, of Reading; published by Hamilton, Adams & Co., Paternoster Row, E.C.; and *Agriculture, Practical and Scientific*, by Jas. Muir, M.R.A.C., published by Macmillan & Co., St. Martins Street, London, W.C.

SLUGS: C. H. B. Liming and trenching the soil, thus burying or killing all that are found in the upper crust of soil; and it is only in frosty weather that slugs penetrate the soil deeper than 6 inches. Many can be destroyed by going out at dusk with a box filled with air-slaked lime, and strewing this on the ground near to the plants they mostly injure. Then slates and roofing-tiles can be laid about half an inch above the soil, and the creatures caught in great numbers as they cling, in the daytime, to the moist under-surface. Cabbage and Lettuce-leaves, and little heaps of bran, are irresistible baits for slugs, and ducks are partial to them.

THE BLEEDING OF GRAPE-VINES: Kao-Nyla. There is nothing to be done. When growth is a little more advanced the exudation of the sap will cease, and the Vines be none the worse. Do not let the soil get dry.

VINE SHEDDING ITS SHOOTS: B. B. The leaves are apparently affected with some fungus, perhaps a slime fungus, and the shedding may be the effort of the plant to get rid of the diseased portions. Send better specimens.

VINES: *Subscriber*. The leaves sent are very deficient in substance, and in consequence readily injured by sunshine whilst wet from syringing. Afford more air with caution, beginning at this date at 8 A.M., and as time goes, still earlier, with a small amount left on all night. This will strengthen the Vines, and give substance and firmness to the foliage.

VIOLET: J. Milson. From two blooms crushed flat in transit through the post, it is impossible for us to give the name of the variety; you should send several, together with leaves of the plant, packed in damp moss in a tin box.

COMMUNICATIONS RECEIVED.—O. B., Belgrade.—D. W.—F. W. B., book, with thanks.—A. H.—R. K., Liverpool, with thanks.—Baron Schröder.—G. S.—J. W. O.—J. B., Berlin.—W. H. S., Twyford.—W. E. B., Granada.—Harrison Weir.—A. H., Orton.—D. R. W.—H. Z. Eisgrub; we shall publish the description shortly.—L. Van den B., Tirlemont (many thanks).—W. C. & Son.—F. A. P.—J. R. J.—G. S. B.—B. A.—W. C. L.—A. H.—A. W. S.—W. G.—A. C. B.—E. T., Graham's Town.—G. M. W.—J. A. F.—C. H. C.—C. G. G. (with thanks).—J. S., Sutton.—G. Wythes.—H. B. J.—W. S. B.—G. M. W.—H. J. J.—E. T. H.—R. D.—R. P. B.—J. W. T.—T. H.—W. W.—J. D.—G. B.—Orchid.—J. H. N.—R. D.—E. C.—J. C. T.—W. C.



ANGRÆCUM ICHNEUMONEUM AT SHIPLEY HALL GARDENS, DERBY.



THE

Gardeners' Chronicle

No. 796.—SATURDAY, MARCH 29, 1902.

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THE PRINCIPAL VEGETABLE PRODUCTS OF THE HAWAIIAN ISLANDS.

AS everyone in the horticultural world knows, Sugar is the staple industry, and is largely cultivated throughout the Islands. It was cultivated in very small quantities before 1876, when a treaty of commercial reciprocity with the United States came into effect. Under the provisions of this treaty an era of unexpected prosperity set in, and the production of Sugar, as well as Rice, increased more than was ever anticipated. Large barren tracts of land were brought into cultivation by extensive irrigation, some of the ditches being 40 miles in length, carried through dense woods, tunnelled through rock, and spanning wide cañons. The Ewa Plantation, near Honolulu, is one of the largest and finest in the Islands. About 90,000 acres are taken up with the various plantations, with a yearly yield of about 225,000 tons of sugar. It requires an average of eighteen months

for a crop to mature, the ordinary yield being $3\frac{1}{2}$ tons to the acre; yet on specially rich alluvial soil, it is sometimes as great as 9 tons to the acre.

Next in importance comes Rice. Its culture is principally carried on by the Chinese, and in the San Francisco market it grades with the best coming from China. The ground is ploughed and well harrowed, the field is then submerged, the water being allowed to stand until the crop ripens, when it is drawn off. The method of cultivating is crude and primitive. The Chinaman sows the seed thickly in a small field; when the plants are about 6 inches high, they are pulled up and taken to the field for planting, where they are set out in the mud by hand in rows about 8 inches apart. When matured the water is drawn off to allow the straw to ripen. The crop is then cut with the sickle. No threshing machines are used by the Chinese Rice grower, but the grain is separated from the chaff by being beaten out with the hoofs of horses or Chinese cattle, as in ancient times.

Coffee is cultivated, but not to a large extent, although Hawaiian, or Kora, Coffee takes a high place among the best Coffees of the world; the trees are grown anywhere, from the sea-level up to 3,800 feet above the sea. One of the greatest difficulties to contend with is insect blight, which is greatly kept in check by peculiar parasites, and ladybirds that have been introduced for each kind of insect. The cultivation of Tea is carried on with good results, the best quality of leaf being obtained on the higher elevations. The high price of labour prevents its more extensive cultivation.

Hemp has been experimented with, and pronounced by experts to be of a good, strong description. The expense of cultivation is trifling, and the yield per acre is about $13\frac{1}{2}$ tons. Ramie, or vegetable silk, grows luxuriantly, but the industry is not developed, owing to the want of suitable machinery.

The soil and climate of Hawaii cannot be excelled for the production of tropical and sub-tropical fruits, and their introduction has added largely to the prosperity of the islands, especially so in the case of semi-tropical fruits, such as the Alligator-pear Banana, Lime (Citrus Limetta), Orange, and Lemon. The Alligator-pear grows to a large size, and the fruit is of a superior quality. The flesh is of buttery consistency, with a nutty flavour, and it makes a delicious dressing for salads; the largest of these heads is about 6 inches long, and weighs upwards of 3 lb. The Mango grows in great profusion, and several varieties are used for making chutney, the best varieties having been imported from India and Jamaica. It is an evergreen with small, glossy leaves; and a gum which exudes from the trunk of the tree is used in medicine. It bears fruit several months of the year, and it is not unusual to find trees with fruits on one side and blossoms on the other.

Cocoa-nuts grow all along the sea-shore, or any spot where nothing else will grow; but they are now very little cultivated. The Sapodilla, Soursop, Pomelo, Cherimoya, Custard-Apple, Papaw, Citron, Water-Melon, Granadilla, Pomegranate, and Tamarind are some of the desirable exotic fruits that do well in the islands. Vegetables of all descriptions

are raised throughout the year, and Water and Cantaloupe Melons are superior to those grown in most countries. Pineapples grow wild on all the islands; there are some twenty-five varieties taking their names from the localities whence they are obtained. Near Pearl City, some eight miles from Honolulu, a plantation of an excellent variety exists. The average weight of the fruits is 8 lb., although the fruits of some varieties have been known to reach a weight of 17 lb. The Pineapple season is from the middle of the month of May to the middle of August.

Bananas are raised in great quantities and shipped to the west coast of the United States, the cost of cultivation being very small. Along the mountain ranges are trees and Vines in luxuriant growth, forests of a magnificent species of tree, whose wood has beautiful markings, and capable of taking a high polish, equalling the finest walnut and mahogany; this is the Koa-tree. The islands at one time were very rich in Sandal-wood, but when the natives found it would be a great source of income to them, they cut down the old trees in a very short space of time, and sold them to dealers in the United States, and neglected to plant young trees for a future supply.

Not the least important vegetable product is Taro. It consists of two kinds—the upland, which grows on the hillsides in dry ground, and the lowland, or more important staple, which is propagated like Rice, under water. Long irrigating ditches are required in preparing the bed. The ground is levelled off and enclosed by a wall impervious to water. The floor of the patch is made as rich as possible, and the top is cut from the ripe roots and set out in hillocks placed several feet apart. The water is let in, and allowed to remain until the crop is mature, i.e., in about twelve months, the only labour required being to keep the soil clear of weeds, and provide a depth of about 6 ins. of running water. Taro can be planted at any season, and a ripe crop obtained. The root is oblong, the largest being about 1 foot in length, and from 3 to 4 inches in diameter. The root is baked by the natives, who make from it what they call *poi*, the baked root being pounded till it forms a paste, which is thinned by adding water, and afterwards allowed to ferment. As a food it is most nutritious.

Another important plant much used by the natives is the Ti; it has also a large, oblong root, and the leaves are of a shining green tint. The Ti-leaves were at one time woven together, and formed a short cloak, which the natives sometimes wore. The root, after baking, is sweet and pleasant to the taste. It is also used to make an intoxicating drink, by bruising the roots with a stone, and steeping in water until it ferments.

Besides the plants mentioned, there are many beautiful flowering and foliage plants, among which Codieums (Crotons) are worthy of special mention. All the varieties grow in great luxuriance, and show exceedingly rich leaf-colouring.

Round the College grounds, in the suburbs of Honolulu, is a hedge of a night-blooming Cereus (Cereus nycticalus), which is a magnificent sight when in flower, the blossoms ranging from 2 to 3 feet in circumference. Donald McIntyre, Moanalua, Honolulu.

NEW OR NOTEWORTHY PLANTS.

MELIOSMA HERBERTI.

IN the *Gardeners' Chronicle* of January 11, 1902, p. 31, I notice a flowering panicle of *M. myriantha* depicted, and a paragraph respecting it on the opposite page. In the West Indies a new species was discovered a few years ago at St. Vincent, by Mr. Herbert Smith, after whom it was named by Mr. Rolfe of the Kew Herbarium. At that time it was only known from that island. Since then, it has been found in Grenada by the late David Alexander, a negro plant collector and myself, and is said to be good for making into posts. We distributed seed recently to the Royal Gardens, Kew, and the Botanic Gardens of Trinidad, W.I. Some seeds sown here have germinated very well. *W. E. Broadway, Grenada.*

BEGONIA GLOIRE DE LORRAINE.

THIS flower is the subject of a very good article in the *Gardeners' Chronicle*, Feb. 1, 1902, p. 75, and as we have been very successful in its cultivation, I thought I could not do better than forward to you (for publication if you think fit) a photograph of one of our plants. This plant is 2 feet from the rim of the pot (a 32) in extreme length, and 2 feet wide as it hangs. It was grown from a cutting struck the first week in April, and the shoots were stopped.

My experience of this *Begonia* dates back some six years, when one cutting was sent to the head gardener under whom I then served, and it was handed to me to propagate and grow; and in several situations that I have been in since that time I have watched the plant carefully as to its requirements, and have succeeded in producing good, well-flowered plants.

I usually cut off the old flowers, and fresh ones then appear. As far as temperature is concerned, the plant-stove is where they always seem to thrive best, providing mealy-bug does not pass from *Crotons*, &c., to the *Begonias*. Plenty of moisture, a snitable compost, which should contain equal parts of peat and leaf-mould, a small quantity of loam and bone-meal, and sufficient silver-sand to keep it open, are essentials.

We had over thirty plants, the majority of which averaged over 2 feet high.

I have not had the opportunity of growing *Caledonia*, and the impression I got once at the Drill Hall was that it was of weak constitution, and reports of it from gardening friends are not satisfactory. *John G. Wilson, Foreman at Eshton Hall Gardens.* [The photograph (fig. 64) was taken by G. C. Mellor, a young gardener at Eshton Hall. Ed.]

NOTES ON THE ASTER-WORM.

IN the *Gardeners' Chronicle* for August 14, 1897, will be found an article on Aster sickness and its cause. In that paper I gave some particulars of a small white worm (*Enchytraeus parvulus*, Friend), which had been guilty of terrible ravages among cultivated plants. This worm had not been previously recorded for Great Britain, though it may have been reported from Germany under another name. Once it had been found, it turned up everywhere. I received letters from every part of the country with specimens

of *Fritillarias*, *Tulips*, *Asters*, *Celery*, and many other cultivated plants, suffering from the ubiquitous foe; and as if to be avenged for the publicity I had given to it, the little annelid invaded my own garden, and soon destroyed an entire row of *Celery*. Now I have received samples of sick *Celery* from Ireland blighted by the same insidious pigmy. Evidently then, the Aster-worm (as I called it from the fact that it was first discovered in

for studying its character. I find among my memoranda the following note: "Some weeks after discovering *E. parvulus*, I again examined the *Celery*, and found a new worm (as figured in my note-books) in its place. I at once questioned whether *E. parvulus* may not be what one might call a larval form." This note is dated March, 1898, and concludes with the query: "Why may not worms have larvæ, and then develop into higher forms? I want to



FIG. 64.—BEGONIA GLOIRE DE LORRAINE: GROWN AT ESHTON HALL AS A BASKET PLANT.

that plant) has come to stay, and is not particular about the kind of host on which it feeds. Given a good supply of succulent roots, tubers, bulbs, or leaf-stalks, and it will thrive so long as its table is kept well replenished.

I have to-day, however, to call attention to a noteworthy fact, which so far as I am aware has never before been observed or recorded. When, in the winter of 1897-98, my own *Celery* began to fail, I at once looked for the cause. I then found the Aster-worm thoroughly established in my garden, and had abundant opportunities

work this out." Unfortunately for me I had shortly after to change my residence, leave my garden with its curious and interesting creatures behind, and give up the study of the Aster-worm for some years.

Now the surprising point is here. The diseased *Celery* from Ireland is infested with these two identical worms in equal numbers. I have not heard of anyone having seen the second form in Great Britain. I have not myself described it in connection with *Celery* or Aster sickness; nor am I aware that anyone

either in England or elsewhere has ever observed the phenomenon. How is it, then, to be accounted for, that when the Aster-worm, whether in England or Ireland, in 1897 or 1902, attacks Celery, it is found to be associated with another form of Enchytreus? My own suspicion is, that the smaller and earlier form may be regarded as in some sense the larval stage of the later and larger. But let us examine the possible explanations.

If the problem had been submitted to me from without, and I had not been able to develop a theory of my own on the strength of repeated observations, I should have said:—

1. We may have here a case of symbiosis, or a kind of free parasitism. One is so familiar with this sort of thing in Nature that even if

possibly the Aster-worm strikes the blow, and the larger species follows it up. That is a second possible hypothesis.

3. It is, however, not in the least contrary to fact or reason that the second and larger worm is a higher or adult form of the Aster-worm. The following are the arguments in favour of this theory:—In the first place, my experience hitherto shows that while the Aster-worm is the form most frequently found when disease begins to show itself, as time goes on the second form increases in numbers till they are equal (as in the Irish Celery recently examined), and finally the lesser form disappears altogether and the larger takes the field, as in my own Celery-trench in March, 1898.

is there, then, in the nature of things to prevent a worm developing in the same way? If this theory of evolution through a larva be accepted, it will throw light on a number of points in the anatomy and life-history of some species of worms which are at present obscure. It might further aid us in reconciling and understanding the descriptions of earlier naturalists, who, studying the larval and imago stages at the same time, tell us that the setæ and other organs vary in number, position, and other details in the different specimens.

To me, therefore, it seems that we have here a capital working hypothesis, and it appears strange that some of the many workers among the Enchytreids have not thrown light on the subject. If we grant that worms may pass through different stages of development, we may have a clue to the meaning of *Lumbriculus*, for example, which seems very clearly to be a larval form. Moreover, a new light will be thrown upon the position which worms hold in the scale of being. We shall see them to be arrested forms of life, which, though they have themselves been evolved from lower larval forms, have yet been unable to get beyond the grade of larvæ. Even larvæ may moult, as do the young caterpillars of the silk-worm. Why then may not worms?

Finally, in order to establish this theory, it will be necessary to pay great attention to details.

It will readily be seen that a good many experiments would have to be undertaken. Check plants would have to be provided, and every precaution taken to keep the results properly registered. This is hardly the work for the practical gardener; but it might well be undertaken by the biologist or practical naturalist who has command of a good garden or two, and could give the necessary time to the experiments. Moreover, the question whether the later form is or is not evolved from the earlier, is not one which materially helps the florist or gardener, as he wants to know how to get rid of the pest. At the same time, the surest way of dealing satisfactorily with any evil is first of all to study its life-history, and hunt it through all its resorts and lurking-places, its protean shapes and forms, so as to be able to identify it wherever it appears, or whatever form it assumes. The student would need to be an expert in annelid anatomy, since such important characters as the brain, sperm-sacs, salivary glands, and other features, would require special attention. If this is hardly the work for a practical gardener, he must at the same time be interested in the life-history of a creature which gives him so much concern and trouble. *Hilderic Friend, Chichester.*

CYPRIPEDIUM EXUL.

MR. DENNY, the Gardens, Down House, Blandford, sends us a flower of *Cypripedium exul* with three sepals, two lateral and one anterior (fig. 65). The lateral sepals are white, except in the basal half, where they are yellowish-green in the centre, marked with large circular purplish spots; the lower or anterior sepal is almost entirely greenish-yellow. Alternating with the three sepals are three petals like the two lateral petals of a normal flower, but placed one centrally, opposite the lip, and two at the sides, decussating with the two other petals. The lip is normal in position and conformation. The staminode is either very deeply divided, or it consists of two united at the base only. The anthers are imperfect, the stigma sub-orbicular, distinctly two-lobed. The ovary is one-celled, with four parietal placentas.

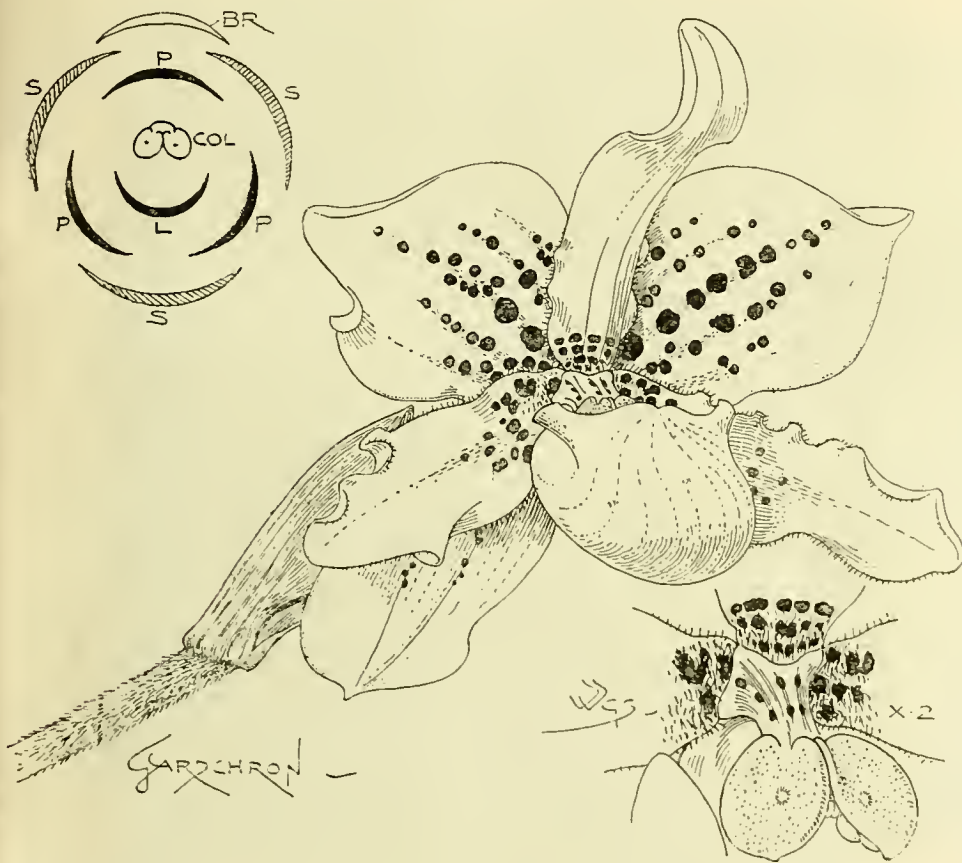


FIG. 65.—TERNARY FLOWER OF CYPRIPEDIUM EXUL.

symbiosis among annelids is not yet proved, there is no reasonable ground for supposing it improbable. We know so little about the life-history of these lowly creatures that we cannot at present say what novelties may not be discovered among them. Perhaps, then, it is symbiosis, or even a species of free parasitism. If that may not be, then—

2. The first and smaller form may be regarded as a pioneer, preparing the way for the larger and later form. This, again, is a frequent occurrence. We know that there are many creatures which cannot win a livelihood except in the tracks of some other worker. It may be the two are related, or it may be they are widely separated in genus or family. Some pests never initiate sickness or decay, but the moment the animal or plant on which they prey is seen to fall at the hand of another, they rush in to do their work. The vulture, which will not kill an ass, will gloat on its carcase if another deals the death-blow; so

As we have no evidence that these worms are cannibals (though I believe cannibalism is not yet an extinct vice among annelids), the *prima facie* evidence is in favour of the evolution of the larger and later form from the lesser and earlier. Next I may add that so far as I have been able to observe the forms, it is rare for the lesser one to show traces of having reached the adult stage. I speak cautiously here, because the Aster-worm has been known to develop the organs of reproduction, as my illustration in the *Gardeners' Chronicle* shows. But this fact would not weaken my theory, as we know that the larvæ of some gnats lay eggs, so it is not unreasonable to allow the larval forms of worms to do the same.

We have again the analogy of the mites to help us. The *Eucharis*-mite, for example, develops from an insect into a spider, or from a creature with six legs (in the larval stage) to one with eight in the imago. What

WINTER-FLOWERING BEGONIAS.

BEGONIA BUISSON ROUGE (fig. 66). — M. Lemoine sends us photographs of two new hybrids, raised by him at Nancy, which seem valuable additions to winter-flowering plants. This hybrid originated from a cross between *B. diversifolia* (*Bot. Mag.*, 1896), which flowers all the summer when exposed to the full sun, and *B. polyantha*, which produces its flowers in the greenhouse in winter. The general appearance is shown in fig. 66. The flowers are produced at the end of August in the open ground, and the plants, lifted in autumn and placed first in a cool-house, and afterwards in a warm greenhouse, remain in flower till January. The flowers are rosy-carmine, and form a variation from the *Chrysanthemum* during the dull season.

BEGONIA PERLE LORRAINE (*sic*). FIG. 67.

Begonia polyantha crossed by *B. dædalea* has yielded M. Lemoine a hybrid whose stem attains a height of about 2 feet or a little less. The leaves are green and black-spotted on the upper surface, paler green with red spots on the lower surface. The flowers appear in January, and are white flushed with rose colour; they remain in beauty from January till April. When in full bloom the plants look as if covered with snow. Both foliage and inflorescence are described as exceptionally beautiful.

CHINA.

THE FLORA AND FAUNA OF YUNNAN, &c.

(Special for the "Gardeners' Chronicle.")

MR. E. H. WILSON, the representative of Messrs. James Veitch & Sons, Chelsea, who has been on a botanical exploring expedition in China for the past three years, is now returning home after what we understand has been a very successful mission. Upon his arrival at Shanghai, he gave to our correspondent a very interesting account of his experiences.

"Mr. Wilson's object, he said, has been the collection of botanical specimens and plants, with a view to introducing them into England, and thereby adding to our knowledge of the flora of China.

"About 2,600 herbarium specimens have been collected. Seeds and bulbs are of course the most noteworthy in the class, these being for commercial purposes, while the plants themselves will be for scientific purposes only. Orchids are plentiful in Yunnan, but not in Hupeh; in fact, there are none worth mentioning, the climate being too cold. I have not seen an Orchid in Hupeh worth 2 cents.

"His object has not been to collect any particular species of plants, but anything likely to be of interest or value to the botanical world.

"Until you reach Ichang the country is flat and monotonous, but a few miles below Ichang you begin to strike a mountainous region. To the north-west you get mountain ranges, with peaks rising from 5,000 to 10,000 feet high. It is in this district that nearly all my collecting has been done. Through the Yangtze gorges, the glens, the creeks, and along the cliffs, I have spent a good deal of time. The most noteworthy thing about these mountainous regions is the paucity of the inhabitants. There are probably not three inhabitants to the square mile, and an interesting point is that they all suffer from goitre, a disease of the throat, which they attribute to drinking snow-water. They live almost exclusively on the common Potato, which thrives luxuriantly here; it forms their staple food. The Potato was introduced to the dis-

trict by the Catholic Fathers about a century ago. It is too cold to grow Rice, Maize, or Wheat."

In this region the tiger, leopard, wild pig, wild goat, deer (both large-horned and short-horned), wolves, and foxes are very common. The common pheasant (Reeve's), and golden pheasant are also to be found here in large quantities.

"These mountainous regions are covered with the remains of forests; here and there are small collections of trees, but for the remainder, the trees seem to have been felled and taken away. The Oak, Beech, Birch, Maple, and Ash, thrive well, as well in fact as

varieties now cultivated in our greenhouses at home have been evolved. Again it is the home of the *Chrysanthemum*. The *Chrysanthemum* is very common here, and is to be found growing in profusion in all the hedges and ditches in and around Ichang; it is from this type that our home *Chrysanthemum* originally came. Of course, the original specimen, by comparison with a cultivated one at home, is a mere weed, notwithstanding that here is the native home of the plant. The Peach-tree grows wild in the higher parts of the mountains, and a form of the Japanese Maple is abundant.

"The unfrequented parts of the district of



FIG. 66.—BEGONIA BUISSON ROSE: WINTER-FLOWERING.

Height about 2 feet; colour rosy-carmine.

we see them in the native woodlands at home, only differing in species. Giant Fir-trees are very abundant, and attain from 100 to 150 feet in height. The Fir tree is commonly used for the making of bee-hives, the trunk being hollowed out; the wood is also used for coffins. Rhododendrons, Viburnums, Clematis, Brambles, Vines, Roses, Apples, Plums, and Privets, run riot in numberless species. The herbs mostly found belong to the Compositæ and Labiatae. Among the flowering plants met with are Primulas, Anemones, and Saxifrages; these make a fine show in the early spring in the higher regions. There are one or two peculiarities about the flora of Ichang which are well worth noting. In the first place, this district is the home of the wild Chinese Primula, from which the numerous

Ichang is rich in coal, there being out-croppings at the surface nearly everywhere you go. In some districts it is being worked by the Chinese. Copper and iron ore are to be found in and around Shinan, where already a few mines are working.

"In the summer in Ichang the thermometer often runs up to 110° Fahr., i.e., of course, during the hottest season of the year; while in the winter it falls as low as 24°. The average rainfall is about 30 inches per annum. Ichang is a healthy place for Europeans to live in. I would add that a pleasing characteristic of the people of Western Hupeh is their extreme friendliness towards foreigners, who never get insulted. I was there during the Boxer troubles, and never had any difficulty of any sort."

JACK FRUIT.

THE Jack fruit (*Artocarpus integrifolia*) has a peculiar odour and flavour which requires training to appreciate; hence, although delicious to those who acquire the taste in early life, the matured traveller is usually very easily satisfied unless the specimen offered be one of those rare variations with an odour differing greatly from the normal. Flavours are indescribable, but that of an over-ripe Melon approaches somewhat the flavour of the Jack. While growing, the immense compound fruit, about 20 lbs. in weight, but often much heavier, hanging from the naked stem or large branches, is an object of special interest. The tree needs an equable

may be ensured. Several of the tied-up seedlings are planted together, deep enough for the end of the stem only to protrude, and if more than one survives, the others are removed, and the twining of the stem continued during the first year; afterwards it is permitted to grow naturally, and the addition of fresh soil above the roots is all the attention required. When about seven years old, fruit begins to appear, and the oldest parts of the tree bear first; the twisted-up portion of the stem underground produces the most valued specimens, probably because they are ripened on the tree, the odour being the first indication of their presence. When the market day arrives, the cultivator puts the odoriferous mass on his head, takes his alpenstock in his hand, and as

CULTURAL MEMORANDUM.

GLOXINIAS.

SEED may be sown at this date, as well as much earlier in the year, in pans filled with finely sifted loam and leaf-mould, together with a fair quantity of sharp sand, and they should be well drained. Having made the soil firm, sow the seeds evenly and thinly, and cover them slightly, and put the pans or pots in a pit having a top heat of 70°, shading from sunshine. When the seed has germinated, put the pans close to the glass, in order to prevent drawing. As soon as any of the seedlings are large enough to be handled, lift these, and prick them off into large 60-size pots, in a soil



FIG. 67.—BEGONIA PERLE LORRAINE.

Flowers white, flushed with rose; leaves green with black spots above, paler and with red spots beneath.

warm and moist climate, and does not object to a long season of heavy rain, and a longer season of dry soil if the air be moist. The climate of the Western Ghats of India, at an altitude of 1,000 to 2,000 feet, is specially favourable. Here the moisture-laden breeze from the sea every evening, even in the dry season, brings water enough to bedew every leaf, and the hot north-east wind is shut out.

The hill people of western India have an interesting manner of propagating the tree. The seed is wrapped in moss, and placed on the roof of the house, out of the way of field rats, and the almost continuous drizzle, if not heavier rain, from June till October, supplies sufficient moisture to ensure germination and growth in a few weeks to about 12 inches in height. The young tree is then wound gently round a stick, and made fast in this position, while the cultivator prepares a site for planting by banking up a slope, so that a deep soil with perfect drainage

he marches off down the boulder-strewn path to the distant market, he is greeted as one bearing a special blessing of the gods, and reckons how many weeks' Tobacco and Chillies he will be able to buy with his fragrant burden.

The Jack has a name in every one of the many languages of India and Ceylon, but none of them approaches the sound of its familiar appellation, and that was probably given by our early voyagers, from the resemblance between its tough outer covering, studded with raised points, and the Jack coat-of-arms, used by soldiers and sailors in mediæval times, and it is more than probable, that after months of salt pork and beef, our sailors enjoyed the rather fulsome flavour of the massive fruit, and gave it the name most familiar to them. Among the many vernacular names of the Jack, *Artocarpus integrifolia* is the most widely known. *G. Marshall Woodrow, Emer. Prof. Botany and Agriculture.*

similar to that in which they were sown. When they have got leaves an inch long, pot them singly into 3-inch pots, keeping them all along in a warm, light house.

The next shift should be into 48's, using a soil consisting of two parts fibrous loam, and one part each of peat and leaf-mould, some bone-meal, and silver-sand, and in these the plants may be flowered. When the soil gets filled with roots, afford manure-water occasionally.

Gloxinias must never be kept in close, moist houses, or one in which there is not much air, or the light is bad, or the leaves and flowers will be weak. *W. Hopkins, Welford House, Hampstead.*

FICUS ELASTICA VARIEGATA.

Though not quite so much in demand as it was a few years ago, this may still be regarded as a useful plant. The great drawback is, that the marginal creamy-white variegation

does not stand exposure to sudden changes of temperature; a low temperature with moisture on the leaves will be sure to cause discoloration, but if the atmosphere is dry they will stand much better. I have known plants to keep in good condition for months in a window in a cool room. The sun coming on the leaves while they are moist is one cause of discoloration. With the exception of being careful with regard to moisture, the cultural requirements are similar to those needed by the ordinary green Ficus, and cuttings will root as freely. By keeping a few strong plants for stock, a supply of young healthy plants may easily be kept up. The cuttings should be taken while the plants are not in active growth. After taking them off, some dry warm sand should be applied to the base to stop bleeding. Put in singly in small pots, using sandy loam, and plunged in a close propagating-pit where there is a good bottom-heat, they will soon root; and in a few days after they are removed from the pit, they may be potted on into larger pots. It is most important that they should be attended to, as they require it, for if allowed to get a check the stems get hard, and they make small leaves; and even if they are got into strong growth again, there will be a contraction of the stem, and small leaves at the point (or rather, part of the stem where they had been checked). Good yellow loam, with manure and sand added, is the best compost, and after the pots are filled with roots, liquid-manure may be used freely. Plants that have been grown on in heat may be gradually hardened off after they have attained to a useful size; and if they have been grown fully exposed to the sun, they will be short-jointed, and the leaves of better colour and substance than when grown under shade. A. Hemsley.

LÆLIA × DIGBYANA-PURPURATA "EDWARD VII."

Our illustration represents one of the most remarkable hybrid Orchids ever raised, and for which the raisers, Messrs. JAS. VEITCH & SONS, of Chelsea, were awarded a First-class Certificate at the Royal Horticultural Society on March 11 last. It is remarkable in every point, but especially in that it shows a surprisingly progressive development in a cross, the general run of whose progeny have been considered as but of moderate value. In the variety Edward VII., however, not only the members of its class, but all other hybrids of *Lælia Digbyana* are excelled. The parentage is *L. Digbyana* × *L. purpurata*; and the flower is white, slightly veined and tinged with a delicate rose colour, the disc of the lip being primrose-yellow, changing to white as it approaches the bright rose-purple marking on the front.

THE SUCCESSFUL CULTURE OF HARDY FRUITS.

In the first place we will notice some of the varieties of hardy fruits which have been tested and have stood the climatic conditions; their market value in competition with foreign produce; also the character of the soil, and best method of cultivation to ensure success.

As a selection of hardy fruits suitable for our climate, I would specially recommend the following:—

In *Gooseberries*, Whinham's Industry, Warrington Red, Crown Bob, Lancashire Lad, Whitesmith; Ashton Red for preserving; Amber Yellow for dessert.

In *Apples*, Closeburn's Seedling, of the style of Hawthornden, but a finer Apple, and heavier cropper; John Peel, as per illustration, raised in the North of England; Brayton Hall, Lowther Castle, Cellini Pippin, Keswick Codlin,

early; Lord Suffield, improvement on Keswick, much larger; Northern Spy, a grand dessert Apple; Warner's King, Turnover, fine Apple, good keeper and bearer; Normanton Wonder, long keeper, indispensable; Stirling Castle, Pott's Seedling, an enormous bearer, and a first-class Apple; King of the Pippins, unequalled as a dessert fruit, and heavy bearer; New Hawthornden, a splendid culinary Apple; Carlisle Castle. The above kinds embrace every Apple necessary to be grown, and have all been tested as to their hardiness.

Hardy Pears for the English climate:—Catillac, Williams' Bon Chrétien, heavy cropper, fine juicy Pear, should be sold off quickly; Beurré Superfin, Duchesse d'Angoulême, Marie Louise, Glout Moreau, Beurré Diel, large fruit; Easter Beurré, fine.

Late Pears:—Hazel, Chaumontelle, Beurré Rance, Louise Bonne of Jersey, Citron des Carmes, and Winter Nelis.

The above kinds will furnish, judiciously managed, a supply of Pears nine months out of the year.

Hardy Plums come next. In these I would recommend Diamond, Victoria, Red Orleans, Rivers' Prolific, Mitchelson's, Jefferson, Wine Sack, Reine Englebert, Magnum Bonum, Kirke's Plum, Heding's Superb, Reine Claude de Bavay, Green Gage Imperial, all being bearers are suitable for both dessert and kitchen use.

This list of select hardy fruits is not complete without the addition of a few Cherries, such as Black Tartarian, May duke, Bigarreau, Morello, and White Heart. A good selection of English grown fruit will always command a good price in the market, according to quality, and their adaptation for the requirements of the home trade.

In the culture of hardy fruits whether as orchard trees or as pyramids or bushes, the following points are essential to ensure success. First, a selection of suitable land; 2nd, the consideration whether the land requires drainage or not; 3rd, a selection of suitable kinds of fruit, and those which have stood the climatic test. Those already given are the names of those varieties which may be relied upon in this respect.

THE LAND.

One of the principal features of successful fruit-culture is the selection and preparation of suitable land. If the land where it is proposed to form the fruit plantation is of a stiff retentive nature, with a marly subsoil that holds the water, a thorough drainage may in the first instance be necessary. Under these conditions, and in this kind of soil, fruit-trees are more apt to form tap-roots, and begin to show signs of canker and rust in the bark. This is certain to act injuriously upon the health of the plants. If, however, a situation for the orchard can be selected in which there is a good depth of rich loamy soil, with a subsoil or stratum of gravel underneath, the necessity for drainage will be obviated. I am aware that in some districts land cannot always be met with of the character I have named, but if not, do not plant unless there is a reasonable prospect of realising a fair return for the outlay. If it is compulsory to plant fruit-trees on a lighter description of soil, see that the ground is well trenched. On old tilled land this is often especially necessary, as the subsoil may and often is of a superior description to the surface soil. When planting see that the trees have a good mulching of well rotted horse-manure, and also a good top-dressing on the surface after planting. Do not plant too deep, but make the trees secure

and firm after planting by treading the ground round the plants.

The next point is the proper state of the trees, so as to secure them from the effects of rough winds. When the situation selected is open to the north and easterly winds, it would be advisable to form a shelter by planting round the land, or at any rate on that side much exposed to the action of the gale, a narrow belt of Spruces or Scotch Firs, with a boundary fence of Whitethorn as a protection for the freshly-planted trees in the earlier stages of their growth; or the following plan might be adopted as soon as the site for the orchard is determined upon. This would be by planting the aforementioned belt of trees about two years before the actual planting of the orchard itself. The system, however, which I should recommend to secure the largest and finest crop of fruit, and also enable the owner or occupier to place the fruit on the market as early as possible, would be to plant bush and pyramidal trees instead of standards. The reasons are: the trees come into bearing much earlier, and a larger quantity of trees can be planted on a given space of land. My advice is: purchase some good strong plants to start with, of the sorts mentioned, from a reliable nurseryman or fruit-tree grower. This will be the first step towards success. I have seen some wonderfully fine crops of Queen of the Kitchen, Lord Suffield, and Pott's Seedling Apples grown in this way on large pyramid trees. In this case there was no undue shading of the fruit by the foliage of the trees. Every autumn, after fruit-bearing, a good top-dressing of manure round the trees, also in the spring, when liquid can be procured, of liquid-manure should be applied. Liberal treatment of the trees in this way will be amply repaid by a liberal crop.

For orchards of a limited space where the land is naturally well sheltered from the winds, I would plant standard trees of a good size to commence with, giving attention to the staking and manuring of the trees as before-mentioned. If a mixed fruit plantation is required, plant Apples and Pears, with the addition of a few reliable Plums among them. It would be necessary to allow a distance of about 5 or 5½ yards between the trees every way. In the intermediate spaces I would recommend Gooseberries to be planted, confining the selection to the four undermentioned kinds:—Whinham's Industry, Crown Bob, Goldfinder, and Warrington or Ashton Reds. The first kind mentioned is acknowledged to be the largest cropper, finest flavoured, and most robust in its growth of all the known varieties of this grand national fruit, and will amply repay good culture and the necessary pruning. I have mentioned Gooseberries as the most suitable and profitable fruit for the purpose, as I consider they meet the demand best for an early market fruit.

In this note I have confined my remarks to five kinds of fruits only, viz., Apples, Pears, Plums, Cherries, and Gooseberries, as I consider them the principal and necessary hardy fruits to meet the national demand.

Another important consideration in the culture of hardy fruits is the pruning of the trees; but this should not be commenced until the trees are sufficiently advanced in growth to be determined by the judgment of the operators.

PRUNING, &c.

Many orchards are neglected at a certain stage of their growth, by not adopting a system of cutting down all old, worthless trees, and filling up their places by planting



FIG. 68.—HYBRID LÆLIA, EDWARD VII. (SEE P. 206).

some good, robust young trees of approved sorts. By a proper attention to this matter of gradual replanting, an orchard may be kept in a fruit-bearing state for many years longer than otherwise would have been the case. In reference to pruning, it is obvious there are two main reasons why it should have attention. First, in order to make the tree send out in a right direction, sufficient branches of the right sort, to form a well-shaped, fruit-bearing tree. If the tree is of robust growth, and sends out a quantity of sappy, unripened shoots, more severe pruning will most probably be required, than for a tree of less vigorous habit, but which forms a greater quantity of well-ripened fruit-bearing wood. The other reason is, that the removal of superfluous branches, and the cutting off of superfluous roots by root-pruning, is a safe course to adopt, in order to maintain a healthy balance between the growth of the tree and its fruit-producing powers. The pruning of branches must be done in harmony with the needs of root-development, and also with reference to the nature of the soil and subsoil. It is, no doubt, more difficult to prune or lift the roots of a tree than to prune the branches, but it is nevertheless a fact, that there are and have been numerous instances in which an almost sterile tree has been transformed into a heavy fruit-bearer by a judicious and timely root-pruning. Practice based on these considerations, has been a long continued demonstration of the soundness of this theory, but, of course, judgment is required to carry out the details. A. W. Godwin, Derbyshire.

The Week's Work.

FRUITS UNDER GLASS.

By JAMES WHYTOCK, Gardener to the DUKE OF BUCCLEUCH, Dalkeith.

Cucumbers.—Plants raised from seeds sown in January, and planted in the middle of February in the Cucumber-house on a ridge of soil, will now be growing freely, and may soon take the place of the winter-bearing plants. During this month there are bright, sunny days, with cold winds, and the nights are cold. In such weather shut off the fire-heat early in the morning, and ventilate only a little at the top of the house, and that during the warmest hours of the day; the temperature with sun-heat may be 85° to 90°. Frequently damp the paths and the walls on bright days. The plants themselves may be sprayed over morning and afternoon, but although the soil be porous and the drainage good, at this early stage the soil must not get very wet. When the plants are stopped, allow three shoots to form from each plant, which retain. Stop the growths frequently, and do not crowd them; allow only one or two fruits to perfect on a plant. A night temperature of 70° is required, but rather than maintain that on cold nights with fire-heat, cover the roof with frigi-domo or other cloth. The plants will be the better for a bottom-heat of 80° to 85°.

Pines.—Smooth-leaved Cayennes are now furnishing ripe fruit, and will continue so to do for the next two months. Look carefully over the plants twice weekly, and apply water to those requiring it, and weak manure-water to plants swelling fruit; guano, Thomson's, and cowshed-drawings are suitable manures for the purpose. Plants with ripening fruit should be afforded clean water, and that very sparingly. Pines are the better for being kept rather dry than wet at the root. The nights being cold this month, a temperature of 60° to 65° on mild nights will be suitable; damp down the paths, and keep the air moist, but do not use the syringe. With sun-heat, and in the absence of cold winds, afford plenty of

air, and close the house or pit in the afternoon when the warmth indicated is about 80°. Fruiting Queen Pines that were started in January will now be throwing up their flower-spikes, and should be afforded a dry, warm air; a night temperature of 65° to 70°, according to the state of the weather, and by day 80° to 85° with sun-heat, with air admitted by the top ventilators. Damp down the paths once or twice a day, and at closing time. If in 10-inch pots, examine the plants carefully twice a week as to their requirements in regard to water, affording water only to those that are really dry at the root. Maintain a bottom-heat steadily at 85°. Succession Queen Pines placed in the pots in which they will fruit, and plunged in a bed having a warmth of 85°, will probably be in need of water at the root, but only in the event of there being considerable shrinkage of the soil. Afford a night temperature of 60°, and apply air when a warmth of 70° by day is reached. Plenty of air must be afforded at this stage, weather permitting, or the leaves will get drawn. Suckers of smooth Cayennes that were taken off in the autumn, and which have been growing freely, may be potted into their fruiting-pots; those of 11 inches diameter are the best for this variety. They should be quite clean, or new, and well drained. As a potting-soil use fresh turfy-loam of a not very heavy nature, and to each wheel-barrowful add a 6-inch potful respectively of bone-meal and Thomson's manure, mixing it well with the soil. The latter should be rather dry, and be made firm in the pots with a rammer. Plunge the potted plants in a bed having warmth of 85°. The air temperature at night should range between 65° and 70°, and that by day from 80° to 85°, with much moisture. At the end of the month of May the plants may be rested for a period of two months by keeping the house cooler and drier. At that date start them again so as to afford fruit in the winter after the Queen Pines are over, these being unsuitable for winter fruiting.

THE ORCHID HOUSES.

By W. P. BOUND, Gardener to J. COLMAN, Esq., Gatton Park, Reigate.

Odontoglossum crispum, &c.—Many of the plants will now be ready for repotting, for it is a mistake to suppose that all *Odontoglossums* of the *crispum* and *Pescatorei* section should be potted in August and September, although at that season, as now, a certain number of plants would be ready for potting. I do not believe in making only two potting seasons. Some growers say of this class of Orchid, that they should be potted at the present time, and another class next month, and so on. But the Orchid cultivator should remember that some may be ready for repotting and some on the contrary may not be ready. With such plants as *Odontoglossums*, especially those species and many of the hybrids which have no definite season of growth, as some are in flower and some are growing in every month of the year, injury is very easily done by repotting at unsuitable times, and the grower should use discretion in deciding which plant or plants are, and which are not, ready. When the new growths are 1 to 3 inches high, the plant may be repotted. At Gatton Park, there are plants which flowered in the months of November and December, which are ready, and others whose flowers appeared in January that will not be ready for some time.

Calanthes.—Most of the deciduous varieties, viz., *C. rosea*, *C. vestita* and its varieties, and the hybrids obtained principally from the first two species, *C. Bryan*, *C. Sandhurstiana*, *C. Veitchi*, *C. Clive*, *C. Cooksoni*, *C. Victoria Regina*, and *C. bella*, should be repotted when the new growths are about 1 inch in length; employing a compost consisting of good fibrous loam two-thirds, good leaf-soil one-third, well mixed together, with a small quantity of coarse, clean sand and crocks broken small; the drainage should be good, and more should be put in the pots where several pseudo-bulbs are placed together in 6 and 7-inch pots, say,

to one-third of the depth. Single pseudo-bulbs should go into 4 and 5-inch pots. Some of the dead roots should be retained in order to steady the pseudo-bulbs in the soil, but if any of the pseudo-bulbs are long and heavy, as is the case with *C. Veitchi*, they should be fastened to a neat stake. Pot firmly, but do not use a rammer, and keep the soil below the rim of the pot; and let the base of the young growth be just below the surface of the compost, which must not contain much moisture, otherwise the passage of the water through it will be in a measure prevented, and the plant will suffer in consequence. The repotting finished, place all the plants together in a sunny position in a moist house, where the night temperature does not fall below 65°, and afford but very little water at the root for some time; in fact, the plants should be kept well on the dry side till the growths have attained to a height of 4 to 6 inches, and then only when the soil is dry. The time for affording water in abundance is when the new pseudo-bulb exhibits signs of development, at which season the soil should not be allowed to become dry. The black spot prevalent on the pseudo-bulbs and leaves of deciduous *Calanthes* usually originates from one of the two following sorts of treatment, viz., too much water and shading in the early stages, or too large a quantity of manure in the compost, or applied in the liquid form. Both conduce to the formation of soft growth. My opinion is, that a clean, hard pseudo-bulb is preferable to a large one developed upon manure, and not only is the flower-spike more compact and beautiful, but there is not that danger from spot which sooner or later appears when manure is used.

Miltonia vexillaria.—Vigorous plants may now be afforded water more freely, and this course should be continued till they have flowered, and on sunny days the syringe should be used overhead at 10 a.m., and 2 p.m. Constant observation is necessary in order to ward off infestation by thrips, which would soon disfigure the growths. Shade the plants from strong sunshine, and if lath blinds are used on the house in which the *Miltonias* stand, the glass above the plants should be painted over with one of the liquid shading preparations, white or grey for preference. If Cattleyas are grown in the house, these plants can obtain more sun, as the blinds need not be lowered so early in the day, and the *M. vexillaria* can obtain the additional shade so necessary to their well being.

THE FLOWER GARDEN.

By R. DAVIDSON, Gardener to EARL CADOGAN, Culford Hall, Bury St. Edmunds.

Pampas-grass.—The young plants raised from seed last year being now established in 5-inch pots, may be planted in their permanent situations if hardened off, or they may find places in the mixed flower borders. The soil should be well drained, enriched with stable-manure, and when the plants are growing freely in the summer, water should be plentifully applied. These plants make excellent "dot-plants" in large beds, surrounding them with plants of *Henri Jacoby* or other dark, free-flowering zonal *Pelargoniums*. If plants are retained for this purpose, they should be repotted. Established groups standing in borders or in parts of the pleasure grounds should now be relieved of the protecting material, and all dead foliage clipped off with the shears, and some well-rotted stable-manure dug in round about the roots with a fork, the dug portion made neat and tidy.

Bamboos.—Bamboos are exceedingly graceful plants in every way, and worthy of a place being found for them in every garden, especially where water is found. The plants require a rich, loamy soil, and plenty of moisture at the root, and a situation sheltered from the east and northerly winds. The present time is a suitable season for planting Bamboos, or splitting and lifting a portion of

the roots from large clumps. Having dug up a part of a clump, divide and lay out the roots regularly in rich loam, leaf-mould, and sharp sand, in ordinary seed-pans or cutting-boxes, with a small quantity of crocks, and place in a warm pit having a mild bottom-heat and a moist atmosphere. The plants should be shaded from strong sunshine, and when the stems reach 12 inches to 18 inches in length, remove them to a cold-frame and keep close for a week, then expose them gradually to sunlight and air, and by the middle of the month of May, they will be sturdy clumps for planting in prepared sites in the open. In some instances, the leaves of the leading shoots of large clumps in exposed positions wither, and turn brown, from the effects of wind and frost, and although these plants present an unsightly appearance, it is well not to remove the withered portions until the young foliage is well developed.

Lawns.—Henceforward the lawn must be well swept and rolled previous to cutting the grass with the lawn-mower or scythe. The cutters of the mowing-machine should not be set too low, or the sprouting grasses will get shorn too close, and will in many instances die in consequence. In warm and sheltered places the grass will have grown to a good length, and will need cutting with a scythe; in the meantime let the machines be examined, and all repairs carried out in readiness for use.

THE KITCHEN GARDEN.

By T. TURTON, Gr. to J. K. D. WINGFIELD DIGBY, Esq., Sherborne Castle, Dorset.

Seakale.—Roots for lifting for forcing and for forming permanent beds should be planted forthwith, i.e., before the sets have made many roots. Directions for the preparation of and the position of the ground having been given in a former Calendar, everything will now be in order for the earrying out of the work. The sets should be planted with a dibber. Roots to lift for forcing should stand in rows at 1 foot apart, and the latter drawn at 2 feet apart, the top of the set being about 1 inch below the surface. For affording a late supply of Seakale, a few rows should be left at one end of the plantation, and before they commence to grow, or early in March, each crown should be covered with a field drain-pipe 1 foot long and 6 or 9 inches in diameter, according to the strength of the crown, which should be filled with finely sifted garden-soil, free from manure by preference, or with sifted coal-ashes. Hence, for this purpose provision should be made now by planting sufficient sets. Permanent beds should measure $4\frac{1}{2}$ feet in width. Plant two rows in each bed in triangular groups, 27 inches from row to row, and 24 inches apart in the row.

Cauliflowers.—The strongest of the plants that have been wintered in frames or hand-lights should now be planted on warm borders or other sheltered positions, planting in deep drills taken out with a hoc. Plant the large-growing Autumn Giant at $2\frac{1}{2}$ feet from row to row, and 2 feet apart in the row. For Walcheren, and the varieties that grow to a small size, plant 3 inches less each way.

Globe Artichokes.—If the plants have suffered from frosts, and provision was made against such loss by potting up some of the side growths in late autumn and storing them in cold pits, these may now be planted forthwith in deeply-trenched, well-manured ground, planting at 6 feet from row to row, and 4 feet apart in the rows. Old stools may also be taken up and replanted, but they do not re-establish themselves so quickly as young plants.

Salsify and Scorzonera.—Sow seeds thinly in drills drawn 15 inches apart on the ground set apart for the root crops, and by preference adjoining the Parsnips left in the ground like those for the winter.

Asparagus.—Asparagus-beds to which a dressing of short, prepared stable-dung was afforded in the winter should now be raked over, and the rougher portions drawn into the

alleys, and collected and wheeled away. Then hand-weed and square up the beds, using the garden-line as a guide. If grown on the flat, rake off strawy portions of the dressing, pull up all the larger weeds, and then scatter some light rich soil over all. Afterwards apply a dressing of agricultural salt, about 2 to 3 ozs. per square yard, before the Asparagus begins to throw up.

Sowing Asparagus-seed.—If the land was prepared as advised in a former Calendar, I prefer to make new plantations by sowing seed in drills, to planting one or two-year-old plants. If on the flat, let the drills be drawn at a distance of 2 feet apart and $1\frac{1}{2}$ inch deep, and drop the seeds in singly at 3 inches apart, the plants being eventually thinned to 18 inches. Beds that are raised above the ground level should be 5 feet wide, so as to take three drills drawn 18 inches apart, the outside rows being 1 foot from the outsides of the beds. An alley $1\frac{1}{2}$ foot wide should be formed between the beds. The plantations formed on the flat may be intercropped the first season with Lettuce, Radishes, &c.; and the alleys of beds with early Cauliflowers.

Celery.—Sow seeds of this thinly in boxes for the main crop, and place in a frame having a not higher mean temperature than 55° . Afford air freely as soon as the seed has germinated, and aim at keeping the plants stocky.

PLANTS UNDER GLASS.

By J. C. TALLACK, Gardener to E. MILLER MUNDY, Esq., Shipley Hall, Derby.

Begonia Gloire de Lorraine.—After a short rest, put the plants into a pit and afford a fairly high temperature, and shade from bright sunshine. Suckers will soon begin to form at the base, and these make the best of cuttings if taken when they are $2\frac{1}{2}$ to 3 inches in length. Do not strike the cuttings in a close case, but expose them in the ordinary manner and keep them shaded. Leaves inserted into the propagating bed a few weeks back are now producing shoots, but I shall keep them in the boxes till the growths are as long as an ordinary cutting before potting them. Many species of herbaceous or fine-rooted Begonias may be struck at this date, and it should be remembered that young and quickly grown plants give more satisfaction than old stunted ones.

Salvia splendens grandiflora.—Cuttings may be taken from specially selected plants that were cut back after flowering. Seeds, too, may be sown in heat; and seedlings assume a better habit than plants raised from cuttings, and the best type reproduces itself true from seed.

Eucomis punctata.—One often observes this species grown in pots, but the plants have not the robust characteristics of those planted in the open air. It is perfectly hardy if planted deeply in the soil, needing then no winter protection. Many kinds of bulbs are the better for being buried somewhat deeply, and to do this would be the salvation of many of the so-called tender species. Those who possess many plants of *Eucomis punctata* in pots should spare some of them for the open border.

Bamboos.—Whether planted out or in pots, Bamboos grown under glass are throwing up their culms, and on their treatment at this period depends much of their decorative value. The process of growth is quick, and during this short season the quantity of water requisite is great—indeed, it seems impossible to apply too much, but no manure-water is required, clear soft water being sufficient; and my experience is, that when this is given, the dead tips which render the leaves unsightly later in the season are not nearly so common. If desired, some of the culms may be stopped at varying heights, so as to keep the plants well furnished at the bottom.

Stove Plants.—In the stove the increase of sunshine, and consequently of ventilation, leads to rapid evaporation, which should be counteracted by syringing the plants

heavily with tepid water morning and afternoon, and damping-down more often. The afternoon syringing is important, as the humidity thus created allows the house to be shut up without fear of scorching the leaves while the sun is still high in the sky—a great aid to growth.

Propagating.—Cuttings of *Tradescantias*, *Ficus*, *Panicleum*, *Pilea muscosa*, and similar plants used as edgings to stages, may now be struck; also the smaller-leaved section of *Rex Begonias* should be raised from leaves, and *Isoplepis* from division. Young and fresh material raised at intervals of three or four months is much better than old, stunted plants.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bickton, East Budleigh, Devonshire.

Cherries.—A slight protection of some sort is necessary against frosts for trees that are planted against warm walls, the flowers opening very early in the season. A single thickness of $\frac{1}{2}$ inch meshed fish-netting, fastened to the coping and kept away from the trees with forked twigs, affords in a usual way ample protection. If the blossom-buds are much crowded, rub off those which face inwards to the wall, and others inconveniently placed; better crops of fruit being carried by trees which are sparse of bloom, than others having what is called a sheet of bloom. The Morello Cherry, which is often given a place on a wall facing north, flowers much later than the sweet-fruited varieties, and it sets its fruits satisfactorily in most seasons in the warmer parts of the country quite unprotected.

The Peach and Nectarine.—With the arrival of warmer days, the growth of the shoots is rapid, and the trees should be examined for insects once a week. If aphides are observed, dust the affected parts with tobacco-powder, which if persevered with will keep the insects from increasing in numbers until the flowers are set, and it is safe to syringe the trees with an insecticide, or with plain water, an operation that I like to defer until the fruit is swelling away nicely. Any neglect to destroy aphides early in the season cripples the growth of the trees, and makes a difference in their condition the entire season. The tobacco need not be washed off, for it is harmless. Apply water to the borders if on examination the soil is found to be getting dry, which is most likely to be the case if glass or other copings are in use.

Strawberry (Alpine).—Where this fruit is liked, plants should be raised from seed sown annually in pans or boxes of light soil, and placed under glass where a small amount of artificial heat can be applied. When the seedlings are large enough to be handled readily, prick them off at 3 inches apart, and harden off so that they can be planted out towards the end of the month of May. The seeds may also be sown out-doors at the end of the month of April, and placed in their permanent quarters when large enough to be handled; but in this case scarcely any fruit will be obtained the same year, although the plants will fruit freely the next year. I would here like to point out the merits of that perpetual-fruited variety *St. Joseph*, a cross between an alpine and a garden variety. Early last April I planted out on a west border fifty plants, and was able to gather fairly good, nice-flavoured, firm fruit so late as the early part of November. The plants of this variety need not be planted at a greater distance apart than one foot each way.

TRADE NOTICE.

MR. JOS. SMITH, of Messrs. Barr & Sons, Covent Garden, and formerly of Sandringham, has been appointed manager to Messrs. Vernon & Murray, Westoning Nurseries, Harlington.

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.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Illustrations.—The Editor will thankfully receive and 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 the unused communications or illustrations, unless by special arrangement.

APPOINTMENTS FOR THE MONTH OF APRIL.

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| TUESDAY, APR. 1 | Scottish Horticultural Association meets. Durham, North, and Newcastle Botanical and Horticultural Society's Show at Newcastle (two days). |
| WEDNESDAY, APR. 2 | Show of Hyacinths at Woodbridge, Suffolk. |
| THURSDAY, APR. 3 | Linnean Society Meeting. |
| SATURDAY, APR. 5 | Royal Botanic Society Meeting. |
| SUNDAY, APR. 6 | Chambre Syndicale d'Hort. Belges, Ghent, Meeting. |
| TUESDAY, APR. 8 | Royal Horticultural Society's Committees meet. Brighton and Sussex Horticultural Society's Exhibition (two days). |
| WEDNESDAY, APR. 9 | Shropshire Horticultural Society's Spring Show. |
| TUESDAY, APR. 15 | Cornwall Daffodil and Spring Flower Society's Show at Truro (two days). |
| WEDNESDAY, APR. 16 | Daffodil Show at Ipswich. Ancient Society of York Florists (Members' Exhibition). Royal Botanic Society Meeting. |
| THURSDAY, APR. 17 | Linnean Society Meeting. |
| TUESDAY, APR. 22 | Royal Horticultural Society's Committees Meet. National Auricula and Primula Show, at Drill Hall, Westminster. |
| WEDNESDAY, APR. 23 | Royal Horticultural Society's Examinations in Horticulture. Royal Botanic Society's Show of Spring Flowers. |
| FRIDAY, APR. 25 | Darlington Horticultural Society's Spring Show. |
| WEDNESDAY, APR. 30 | Midland Daffodil Society's Show at Birmingham (subject to alteration). |

SALES FOR THE WEEK.

WEDNESDAY, APRIL 2—Azaleas, Roses, Carnations, Palms, Perennials, and Miscellaneous Plants, at Stevens' Rooms, at 12.30.—Liliums, Roses, Palms, &c., by Protheroe & Morris, at 12.0.
FRIDAY, APRIL 4.—Plants, Bulbs, &c. by Protheroe & Morris, at 12.0. Orchids, 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 —45.7.

ACTUAL TEMPERATURES:—

LONDON.—March 25 (6 P.M.): Max. 50°; Min. 40°.
March 26.—Fine.

PROVINCES.—March 25 (6 P.M.): Max. 46°, S.W. Cornwall; Min. 39°, Orkneys.

By an overwhelming majority the Fellows of the Royal Horticultural Society assembled in their "lodgings" in the Drill Hall on Friday last, approved of the proposal to purchase for 999 years a plot of land in Vincent Square, Westminster, for the purpose of erecting thereon a suitable "Home," including offices, lecture rooms, committee rooms, library, and an exhibition hall. The verdict,

in which many gentlemen from the provinces took part, was given in such an unequivocal and unmistakable manner, as cannot fail to be gratifying to Baron Sir HENRY SCHRÖDER. To that gentleman, more than to any other, the scheme owes its initiation. His liberality very materially lightens the financial difficulties which the Society has still to encounter in carrying out this scheme. Time after time the subject has been brought before the Fellows, but always with the same result, so far as the principle is concerned. The verdict being all but unanimous, there can be no question now that it represents the opinion of the vast majority of the Fellows. That being so, the Fellows are in honour pledged to give the scheme all the support in their power. The financial bogey, which gave us such alarm when the discredited garden-schemes were proposed, has not, it is true, entirely disappeared: but it is



BARON SIR HENRY SCHRÖDER, Bt.

far less dreadful to look upon now than it was then, and in view of the valuable asset which we shall have in our possession, we can afford to smile confidently, where before we could not conceal our dread.

We are quite cognisant of the risks entailed when we begin to meddle with bricks and mortar, and are not oblivious that the cost of maintenance must be considerably heavier than it is now. Still, we know that all these considerations have been taken into account, first by the Committee presided over by Baron SCHRÖDER, and then by the Council of the Society. The Committee contained among its members the President, Sir TREVOR LAWRENCE, and the Secretary, the Rev. W. WILKS, who, together with Mr. HARRY VEITCH, represented the Council. Mr. SHERWOOD, a first-class business man, it will be admitted, also took an active share in the work of the Committee. That Committee was throughout absolutely unanimous in opinion, though we believe there was not such harmony on the Council. When we have the assurance from Baron

SCHRÖDER endorsed by such men as we have mentioned, that the risk is not heavier than the Society, under existing circumstances, may fairly undertake, we do not think the Fellows need be apprehensive of the result. Its success now lies with them.

The outcome of the meeting on Friday must be gratifying not only to Baron SCHRÖDER, but to Sir WILLIAM THISELTON DYER, Sir MICHAEL FOSTER, DR. MORRIS, and others, who, in the very darkest hours of the Society, did not despair of its ultimate recovery; but with zeal and energy for which the Fellows cannot be too grateful, did their utmost to run the Society on business principles, and lift it to a higher plane than ever. Some, as we were told by the President, rendered substantial financial aid. The names of these benefactors were not revealed, but they, with the others we have mentioned, must, we venture to think, have been as much surprised as gratified at the success which has followed the carrying out of the policy they so strenuously advocated. Where so many have given of their best to further the interest of the Society, it might seem invidious to mention more names, but we should not be doing justice if we omitted to recall the services rendered by the President and the Secretary. Throughout the President has acted with an impartiality and a judgment that command universal respect; and as to the value of the labours of the Secretary, the present flourishing state of the Society affords sufficient testimony.

Of the two classes of Fellows, metropolitan and provincial, it is difficult to see which will reap the greater benefit from the Home, as we prefer to call it, rather than the Hall. Those near at hand will naturally use it most often, but it is not so essential to them, and it is questionable whether they will really derive as much benefit from it as the provincial and colonial Fellows, who, when they come to London now experience the want of such a club as it is hoped will soon be at their service. In any case, the gentlemen from the shires who even now come up to lend the Society their aid, time after time, and who were well represented at the last meeting, afford convincing proof that the Society is not exclusively metropolitan, nor even English, nor Irish, nor Scottish; it is British in the widest sense of the word. The Home will afford a common meeting-place for horticulturists of all denominations, from this or from that side of the seas. The number of Fellows who would make personal use of the gardens would be infinitesimal.

As we are all of one opinion, in principle, with reference to a garden, and the only difference has been as to whether the Home or the garden should come first, it is to be hoped now that those gentlemen—not more than three, we think—who believed themselves to be "conscientious objectors" either to one proposal or the other, will now with one accord rejoin the Council on the first opportunity. Everyone sympathises with their motives, and everyone knows that they have the interests of the Society at heart. They have severally made their protests. Now that the verdict of the Society is so unmistakeable, let us hope they will sacrifice their personal predilections, and join heartily in a strenuous effort to secure a suitable Home.

THE COUNCIL OF THE ROYAL HORTICULTURAL SOCIETY.—We are informed that Baron SCHRODER has accepted a seat on the Council in the room of C. E. SHEA, Esq., resigned.

LINNEAN SOCIETY.—At the evening meeting to be held on Thursday, April 3, 1902, at 8 P.M., the following papers will be read:—1. "On the Composite Flora of Africa," by Mr. SPENCER MOORE, F.L.S., &c. 2. "A Halonial Branch of *Lepidophloios fuliginosus*," by Prof. F. E. WEISS, B.Sc., F.L.S., &c.

A GIGANTIC GRASS SEED.—At the meeting of the Linnean Society on Thursday, March 20, Dr. OTTO STAFF exhibited several seeds of *Melocanna bambusoides*, a species of Bamboo, which completely upset the popular idea of grass seed dimensions, the giants of which are presumed to be represented by pedigree Wheat and Maize, in which latter the huge mass of seeds constitutes, it is true, a very substantial fruitage; the actual seeds, however, are comparatively small. In *Melocanna*, on the other hand, in lieu of a spike arm or cylindrical mass of associated small seeds, we have solitary ones, measuring no less than 5 inches in height, by 3 in diameter, a massive pear-shaped body, the size and form of which are as utterly different from our usual idea of a grass seed as can well be conceived. By what evolutionary process this huge solitary fruit has been arrived at, is not clear, but as might be expected, the great store of nutriment embodied in so large a fruit, favours the development of the associated embryo plant to such an extent, that the first product of germination is a robust growth, which practically secures establishment and continued existence. The single seed is thus fully as efficacious, if not more so, in securing reproduction, than a very large number of small ones, and by its greater individual vigour, would probably have an infinitely better chance of survival in a dense growing Bamboo jungle, where small weakly seedlings would be utterly incapable of reaching the light. This, indeed, is probably the key to its genesis.

MR. ROBERT CANNELL.—All friends of that enthusiastic horticulturist, Mr. H. CANNELL, of Swanley, will be pleased to learn that the climax of the dangerous illness through which his son ROBERT CANNELL, of Eynsford, has passed, has been safely reached, and now, with good nursing and ample nourishment, there is every reason to hope that the patient will soon regain his customary health. For a few days the patient's life hung in the balance, and gave to his friends profound anxiety. Mr. ROBERT CANNELL has for several years had the onerous charge of the seed-growing department of the well-known CANNELL firm at Eynsford, and has been a frequent visitor at the Drill Hall meetings. It is greatly hoped that he may now be restored to health, and enabled to discharge his responsible duties.

CAPE FRUIT.—The *Carisbrooke Castle* has arrived with the following: Grapes, 609 boxes; Peaches, 96; Pears, 29. Total, 734 boxes.

THE DUKE OF BEDFORD'S FRUIT FARM.—As regards paying, the returns from the Woburn Fruit Farm for the past year, which have just been completed, show some highly interesting results. We learn that the returns range from £50 to £80 per acre. When this farm was started, it was predicted by those who had known the land well for more than half a century, that fruit-growing there was sure to fail, and those who do know the land and the unfavourable circumstances which

there prevail, will agree that only the best possible management could produce results anything approaching it. These results are not "calculated theoretically," but are the actual sales, retail and wholesale, the average prices of all qualities being taken, so that there is no exaggeration. It is well known that with the system of grading some of the Apples made very high prices, and we have no doubt that some of the kinds of fruit, if taken alone, would amount to a much higher total per acre. The farm has only been established a few years, and the trees have not yet come into full bearing, but the returns show what fruit Bedfordshire land will produce under the best cultivation, good management, and the needful outlay.

PHAIUS GRANDIFOLIUS.—A correspondent, residing at Neston, Cheshire, kindly sends us flowers of this species with two sepals, placed fore and aft, two lateral petals at right angles, no lip, and an erect column, with the wings much narrower than usual. This reduction of the parts of the flower to four (two decussating pairs), is not all uncommon in Orchids. Whether this diminished number of parts is merely an accidental degeneration, or whether it represents an ancestral condition, when Orchid flowers were of more simple construction than they now are, is a matter for speculation. From a horticultural point of view the change is not desirable.

AN INTERESTING JUBILEE.—In the autumn of 1901 the firm of Messrs. EDMONDSON BROS., seed merchants, 10, Dame Street, Dublin, completed fifty years of existence, and in commemoration thereof have published an illustrated pamphlet, in which the development of the house is set forth in modest terms, full of interest. The late JOHN EDMONDSON, the founder of the firm, was originally in the service of a railway company in Ireland, and subsequently he went to Birmingham as the agent of his uncle, Mr. THOMAS EDMONDSON, the inventor of the railway ticket system, and while there his love for his garden and flowers induced him to take up the culture of Pansies especially, which he grew with great success. In 1851 Mr. EDMONDSON went into business as a seedsman in Dame Street, Dublin, and seeing the importance of bee culture, he also took up the sale of bee appliances, and was the means of popularising it in Ireland. In 1861 he was joined in business by his brother THOMAS, who in 1869 started the *Irish Gardeners' Record*, a weekly paper devoted to gardening, forestry, and bee-keeping, but which ceased to exist after a few years. In 1864 Mr. THOMAS EDMONDSON retired, and succeeded in establishing two large enterprises, one, the Dublin Laundry Company, the other, the Dartry Dye Works. In 1894 Mr. JOHN EDMONDSON died, but the seed business is continued under the management of Mr. GEORGE WATSON. Garden and agricultural seeds, flower roots, tools and all requisites, with bee appliances, are the leading business features.

THE FECUNDATION OF ZAMIA.—Mr. H. J. WEBBER, who took a prominent part in our Hybridisation Conference, has published in a *Bulletin* of the Bureau of Plant Industry, Washington, a remarkable paper on "Spermatogenesis and Fecundation of *Zamia*." It embodies the results of investigations made in Florida. As an aid to the practical work of plant-breeding, it is pointed out "that it is highly important that a more thorough knowledge of the reproduction of the plants be gained; such investigations throw light on the phenomena of heredity, which are at the foundation of plant-breeding work." One

extraordinary fact brought to light is the size of the spirally-coiled spermatozoids, which are so large that they may even be seen by the naked eye. A summary of the history of the investigations made by HIRASE and other Japanese botanists in the case of *Ginkgo* is given, together with an epitome of what has been done since by the author and by various German and Russian naturalists. The importance of this paper can hardly be over-estimated, but it is for experts only. We expect that novices would find it difficult to answer the question, "Is the blepharoplast a centrosome?" Nevertheless, the history of the divisions which take place in the nucleus, on which the growth of the plant depends, cannot be elucidated completely till this and cognate questions be answered. Fecundation consists of a fusion of two entire cells—cytoplasm with cytoplasm, and nucleus with nucleus. The summary given by Mr. WEBBER must be mastered by all those who are engaged in embryological study. Six plates illustrate the memoir.

SELSDON PARK.

[SEE SUPPLEMENTARY ILLUSTRATION.]

THE residence of Wickham Noakes, Esq., is situate about 3½ miles out of Croydon, and the road ascends almost all of the distance. The house is said to have been built by a Mr. Smith, 100 years since, of Bath stone, which became very much injured by the action of the weather, so much so that in 1891 the stone building was encased with red bricks, as shown in our Supplementary illustration. The view in this photograph shows the east front, partly covered with *Wistarias* and *Roses*. The tree with a seat around it is a specimen of *Cedus Libani*, which, with a companion tree of the same species, also in the front but not shown upon the photograph, was planted to celebrate the commencement of century nineteen. The tree in the illustration has no leader, and consequently is composed of very numerous branches, and is not more than 30 feet high at most, whilst its companion is a handsome tree, rising some 70 feet in the air, and possessing a bole 14½ feet in circumference.

Very fine views may be had from this side of the house, extending over a considerable expanse of pretty country and to Worm's Heath. There are groups of *Rhododendron ponticum* about the lawn, which slopes rather steeply from the house; and before reaching the Park boundary of blue palisades, there are small flower-gardens, one upon the ground level, and another at its side sunken a foot deep or more. At this point and others in the garden, the upper soil is sand only, occasionally 20 feet deep, therefore some of the trees are not very long lived. Passing round to the north side of the house, however, there is much less sand, and some good trees are noticeable; whilst upon several parts of the estate of 700 acres, the timber is as good as may be wished. Other than the two Cedars mentioned above, we may instance a tall and handsome copper Beech on the east front, still showing the point where it was grafted, about 1 foot above the ground level; sweet Chestnuts, Beeches, including two specimens of imposing dimensions, and an *Aranea imbricata*, planted 66 years ago on the sand, and now about 55 feet high. This is a good specimen, and interested us by reason of the unusual amount of young growths around the stem, wherever a branch has been maimed by wind, or has died from other reasons. The growths do not proceed from the main stem, but from the branches, at a point not more than 1 inch from the stem. They give to the

tree a very curious appearance, for many of them are short, and they are dense enough to hide the stem, which in this tree is usually so conspicuous an object.

Previous to Mr. Noakes buying the estate two years ago from Mr. Stevens, Selsdon Park was the residence for some years of a Bishop of Rochester, and during some part of its history the garden was not kept in first-rate condition. Mr. J. A. May, the gardener, who accompanied his employer, when removing from Leatherhead to Selsdon, has consequently had occasion to take away many dead and dying trees from the grounds, and replant the shrubberies to some considerable extent. In doing this, use was found for many of the old tree roots and butts, which have been grouped in various places to form rooteries, and adorned with choice varieties of hardy British Ferns.

There is a very good kitchen-garden of two acres, but it slopes directly to the east, and is, in consequence, not conducive to early cropping. The walks are all edged with Box, of which the gardener has three-quarters of a mile to keep trimmed. An iron arch spans part of the main walk, and supports cordon and other Pear-trees; whilst a wooden arch is covered with rambling Roses, amongst which Turner's Crimson Rambler grows to an extraordinary length. Just below the kitchen-garden chalk comes to the surface, and here Broccoli keeps grandly through the winter, and has a very small casualty list.

THE GLASSHOUSES.

There is a conservatory attached to the east front of the house, forming indeed part of the building. It contains Palms and other large foliage plants. Another spacious house with lantern roof in the grounds to the north of the house was built about twenty-six years ago. It has a stone back to the north, and all the rest of the structure is glass, down almost to the ground-level. It was doubtless intended as an orangery, and serves very well now for the cultivation of fruit-trees in pots including Tomatos.

The rest of the houses are all together in a portion of the garden. They include a Peach-house, with trees at front and back, that have set a very abundant crop of fruits; three vineries, a show-house, two Orchid-houses, several other plant-houses, a Cucumber-house, and two Melon-houses. A span-roofed house full of *Odontoglossums*, &c., contains a large number of plants in very healthy condition. Most of them are now showing flower-spikes, whilst already in bloom are *O. crispum*, *O. Pescatorei*, *O. Rossii majus*, *O. gloriosum*, *Sophrontitis grandiflora*, *Masdevallia Harryana*, &c. There are some very good plants of the commoner *Dendrobiums*, and excellent basketsful of *Cologyne cristata*, the variety *alba* succeeding even better than the type. Another house contains *Cattleyas*, *Cypripediums*, *Lycastes*, *Laelias*, &c., and good results are obtained from these.

The Chinese Primulas are just passing out of bloom, but *Cyclamens* are still gay. We have seldom seen a better-grown collection of *Cinerarias* than is contained in one of the houses. The strain is of the very best, having finely formed flowers, 3 and 4 inches across, of very brilliant colours, and every plant is an instance of good cultivation. Some strongly growing herbaceous *Calceolarias* will succeed these.

We should have mentioned that in two new teak houses, the Melons are being grown upon stages without bottom-heat, except that there are hot water-pipes under the stage. This practice is to be adopted this season, owing to a suggestion of a writer in these pages some time ago.

HOME CORRESPONDENCE.

PLANTING FRUIT-TREES ON RAILWAY BANKS.

—I have read with interest Mr. Burbidge's note at p. 140 in the issue of the *Gardeners' Chronicle* for March 1; also Mr. Wadd's on p. 163 for March 8, in which he suggests the planting of fruit-trees in hedgerows and by the sides of public roads. I have often thought that if the sunny and sheltered railway banks were planted with fruit-trees of various kinds, it would not only add great beauty to the landscape, but the owners of the banks would soon realise good profits from the fruit, as after the first outlay, the expense attached would be practically nominal. Such positions would produce first-class fruit, which is always in great demand. I am sure if all the land which is now lying in waste were utilised in this manner, the result would be most satisfactory to the various railway companies, and the beauty would be much admired by passengers when the trees were in full blossom, and later on in the year when hung with ripe fruit. *Geo. Bond, High Ashurst Gardens, Dorking.*

FRUIT-TREES ON ROAD-SIDES.—In these days, when so much land has gone out of cultivation, there is surely no need to advocate the planting of fruit-trees by the sides of roads in the way your correspondents advise; far better plant timber-trees suited to the soil and locality. In most parts of Herefordshire the Pear grows in the hedgerows, while in Worcestershire the Plum occupies a similar place; and here in southern Oxfordshire the Cherry is to be seen everywhere. I may add that in nearly all cases they are seedlings. I am afraid, if anyone adopts the planting of fruit-trees on the roadside, they will make a bad speculation. No doubt, from a landscape point of view, the fruit-trees when in bloom would add to the beauty of the country; but on the other hand, in many parts of the country one sees plenty of such trees in gardens and orchards. *A. J. Long.* [Hedgerow timber, we would remind our correspondent, is seldom fit for any purpose but fuel. *Ed.*]

LILIUM GIGANTEUM.—Here is a fact or two about *Lilium giganteum*. At Sowerby, 2 miles from Bridlington, *L. giganteum* grows both in the unsheltered garden, and also partially shaded in the adjoining shrubberies, to 8 or 10 feet high, and ripens seed every year. It is perfectly hardy there. At Boynton, also, which is 2 miles inland from Bridlington, it flowers and ripens seed; and I consider it quite hardy, although it has not grown there quite as finely as at Sowerby. As for *Crinum*s, two or three species have been grown successfully out-of-doors, by Dean Herbert (in Yorkshire) and others; but a large part of the genus come from tropical or sub-tropical climates, and various soils and situations, and it is absurd to lump them all together. *C. W. Strickland, Hildesley, Malton.*

—In my note on this noble Himalayan Lily (p. 124), I advocated a shady spot for its culture where such site was not encroached upon by the roots of trees; but at the same time deprecated amateurs being deterred from growing it in an unshaded situation by Mr. G. B. Mallett's sweeping assertion that it could not be grown successfully in the open border. I had no intention, as Mr. Mallett appears to infer, of limiting this recommendation to the south-west of England, the district from which I wrote, and do not think that my words were open to such misinterpretation. I am fully aware of the existence of Scotland, and I am also aware from personal observation that *Lilium giganteum* often flourishes there in the open, unshaded border. Mr. S. Arnott and the Rev. David R. Williamson, both valued contributors to the *Gardeners' Chronicle*, and both Scotsmen, have written of the behaviour of this Lily in their country. Mr. Arnott has, in past years, told us of a specimen 14 feet high, growing in an angle of a high kitchen-garden wall facing south-east—an exceptionally sunny position; while Mr.

Williamson has introduced his brother amateurs to a "splendid specimen" growing in his own garden, over 10 feet in height, bearing "numerous large flowers." Personally, I should consider the West of Scotland, with its moist climate, preferable for Lily culture to certain districts south of the Thames, which in hot summers are burnt up with the heat through weeks of torrid weather. Late frosts, which Mr. Mallett speaks of as a danger in the north, are quite as disastrous, if not more so, in the south-west, where growth naturally commences at an earlier date; and I remember a Lily-grower in that district, who contributed a paper to the late Lily Conference of the R. H. S., suffering severely from this cause a few years ago. I am glad to see that such an authority as Mr. Wolley Dod and Sir H. Maxwell are also able to testify to *L. giganteum* flourishing in Scotland; while in the former's garden it is evidently as thoroughly at home as it can ever be south of the Thames. If frost is anticipated when the flower-stem shows itself, a few evergreen branchlets firmly fixed into the ground so as to shelter the young growth, should prove sufficient protection either in Cornwall or Caithness. *S. W. F.*

NARCISSUS ODORUS IN GREENWICH PARK.

—A friend has called my attention to a variety of *Narcissus odorus* which he saw flowering abundantly in Greenwich Park early in February. The Curator informed him that they begin to flower about Christmas, and continue till April, and that he calls them "the early-flowering Jonquil." The Curator gave my friend specimens, which he has forwarded to me. On comparing them with the portraits in Burbidge's *History of the Narcissus*, they answer to plate xxiv., *N. odorus* var. *heminalis*. Perhaps some of your readers who understand the species *N. odorus* may have noticed them, and will tell us whether this very early habit of flowering is usual with var. *heminalis*. I find that Haworth enumerates nine varieties of *N. odorus* (Philogyne), and identifies *heminalis*, which he calls the narrow cupped, with Parkinson's *N. juncifolius luteus magnocalyce*. Par. 93, fig. 4. *C. Wolley Dod, Edge Hall, Malpas.*

THE CHAMPION GRAPE PRIZE AT SHREWSBURY.—As I have now received the Shrewsbury schedule, I am pleased to see that the long-talked of £50 "Queen's Champion Cup" for twelve bunches of Grapes is backed with a £20 cash prize. But there is too great a falling off in the second prize, £12 in cash with "Encyclopedia Dictionary," which book the majority of competitors may already possess. If the firm which offers this prize would come forward and give the £8 Queen's in cash, it would make the competition keener. *A. Kirk, Norwood, Alloa, N.B.*

YELLOW SNOWDROPS.—If, as I gather from Mr. Mott's letter in the *Gardeners' Chronicle* of March 15, the segments of the Snowdrop flowers upon which he remarks are yellow, and not only the ovary and the marks on the segments, which are generally green, he has made a noteworthy find, though it was one not unlikely to appear some day. I had, however, expected to find it among seedlings or colour sports of *Galanthus nivalis viridiflorus*, which has the segments green instead of white. If the yellow tint should prove permanent, as one may hope, these Snowdrops will be most interesting. *S. Arnott.*

ERANTHIS HYEMALIS AND E. CILICICUS.

—In my garden *E. cilicicus* seems to be rather more tender than *E. hyemalis*; and several of my friends have found it difficult to establish. On the other hand, *E. hyemalis* flowers regularly and profusely, except where it is in a dry, sunny place. From its behaviour this spring, however, I think *E. cilicicus* is going to do well in suitable positions, and in a shady corner in a peaty soil it is flowering better than before. It does not, however, equal *E. hyemalis* in freedom or earliness of flower. Under what conditions does Mr. Bailey grow these Winter Aconites? *S. Arnott, Rosedene, Carsethorn, by Dumfries, N.B.*

THE CORONATION — RETARDING ROSES.—There is no doubt but that the supply of flowers of the Rose will equal the demand at Coronation-time, as the season is just right, the weather being favourable; and it is very probable that for some time afterwards the Rose will be in great demand for decoration, and we should now think out some means by which the supply may be prolonged. I should say that those persons who have a large stock of unforced Roses growing in pots should from now onwards keep them in a cool situation, which will probably make the difference of a fortnight in their flowering; also beds of dwarf plants might, before buds are far advanced, be shaded from strong sunshine, and some sorts may have the stronger shoots topped before the flower-buds are formed, the bush being made to break anew. *A. J. Long, Wyfold Court.*

THE LATE DAVID SYME.—I notice in the *Gardeners' Chronicle*, February 8, 1902, in referring to the death of my oldest friend, Mr. David Syme, you say he commenced commercial life fifty-six years ago. If your reporter had said sixty years, you would have been close upon the time. I can see him and his mother in my mind's eye at this distance of time, coming to the Glasgow Arcade at 3 A.M. I had just disposed of the shutters, and was adjusting the sacks of nuts, and such other articles as formed part of the stock-in-trade of the business—in those days Mr. James Thyne, not J. & R. Thyne, this was a much later development—and seeing a wee laddie hanging about, I asked him if he was the new boy. His mother answered for him, by saying she was not sure of that, so I had to lug about the sacks, more than half my own height, unaided by the wee laddie, who would willingly have given me a helping hand but for his cautious mother, who would not commit the apple of her eye to a situation he had the previous day committed himself to without the consent of his parents; so mother and son waited the arrival of Mr. Thyne. The mother was anxious as to the kind of work, which was simply to run out with parcels, and when she ventured to make some stipulations, to which Mr. Thyne at once assented, and told the mother to take the boy away or leave him to the understood customs of the shop. Mrs. Syme was a sensible woman, and finding wee Davie had no notion of remaining longer under the schoolmaster, left him, and he grew up in the interest of the fruit side of the shop, and I in the interest of the seed side, till 1846, when I left for the north of Ireland as head shopman to Daly, Drysdale & Co., Newry. Davie took my place amongst the seeds, and well maintained the progressive development of this department, which preceding older men had failed to do, leaving the department as they found it. *Peter Barr, V.M.H., Cape Town.*

PAVIA INDICA, ETC.—In the last issue of the *Gardeners' Chronicle*, I read with interest Mr. Bean's description of the various trees of *Aesculus* growing in the different parts of this country, and assuming that it might be of interest to some readers of your Journal to know there are two fine young specimens of the *Pavia indica* in the gardens at this place. The trees are about 20 feet in height, and for the last three years they have flowered profusely. The late Sir Charles Bunbury, Bart., brought the seed from the Himalayas. The seed ripened at Barton Hall, germinated freely, and numbers have been raised at the garden. There are in the garden three trees of *Aesculus macrostachya*; one, the most prolific in flowering, coming into flower about the first week in August. *T. E. Walker, Barton Hall Gardens, Bury St. Edmunds.*

SNOWDROPS.—Your correspondent, J. Jeffrey, p. 150, writing from St. Mary's Isle, Kirkcubright, of the "Earliness of Snowdrops," quite omits to give a date of their flowering. During one of my revisits to the west coast of Scotland, January 14, 1874, Snowdrops were in full flower on that date.

The situation was at Knockdow, a lovely place about three-quarters of a mile from the mouth of Lochstriven on the eastern shore, and also within a short distance of the Kyles of Bute. They were of the single-flowered variety; a boxful I brought with me much surprised my friends in Warwickshire. At this place (Berkswell), March 3, the double variety could scarcely be said to be at their best, and the single ones are no forwarder. If the west coast is new to your correspondent, I can quite understand his appreciative remarks, not only of the earliness but also the freshness of all kinds of shrubs in their highly-favoured locality, which owes the mildness of its climate to the influence of the Gulf Stream drift, and warm westerly winds. Let these be cut off, and then the western shores of the British Isles would in all probability enjoy no better climate than that of frozen up Labrador, which is exactly in the same latitude. *W. Miller, Berkswell.*

THE HORTICULTURAL HALL.—The Council of the Royal Horticultural Society and the Committee of Selection are to be heartily congratulated on the decision come to at last week's general meeting. A new era has now opened for the Society; it only remains for every individual Fellow to do his or her best to provide the necessary funds, and we shall have a permanent home for horticulture in London, where we may hope, eventually, to see all its various branches unite under the aegis of the Royal Horticultural Society; and if a suitable building is raised, it may possibly prove a source of revenue to the Society, as it would be useful for many purposes when not required for horticultural meetings and exhibitions. The new garden can wait for a few years. The trials of vegetables, flowers, &c., embrace some useful work, which the Society must continue and develop. In the meantime, all of us must endeavour to make the new hall worthy of British horticulture, of the Royal Horticultural Society, and of the largest and richest city in the world. *W. H. Divers, Belvoir Castle Gardens.*

EUPHORBIA (POINSETTIA) PULCHERRIMA.—May I be allowed space for a few remarks on the closing sentence or two of your correspondent "A. C. E.'s" note on the propagation of Poinsettias, p. 180? He says:—"In South Devon and Cornwall these subjects summer well in cold pits, and the lights may be left off on mild and dry nights." But I can assure "A. C. E." that here in North-east Sussex, where I reside, the temperature falls considerably below that of South Devon, yet Poinsettias are grown out-of-doors for at least three months of the year, viz., from the middle of the month of June till late in September. The plants are planted in a border in the front of an earlyinery, in a compost similar to that in which they would be potted, and afforded water, and syringed more or less according to the state of the weather. In September they are lifted, and placed on a bed in one of the pits, as close together as the balls of soil and roots will allow, and soil is worked in amongst them as the job proceeds; a good quantity of water is afforded, and mats are thrown over the glass when the sun shines, these being removed in a few days. The bracts on plants thus treated are very fine, some measuring 15 inches across. Had I to grow them in pots for decoration, I should treat them in the same manner; only, instead of planting out, I would plunge the pots in the ground. Even in the northern parts of the country, I should plant out in cold frames those intended for cutting, and these in pots plunge in frames, exposing them during the day and placing the lights over them at night, the nights being colder in the north than in the south, although it is exceedingly warm in the daytime. *J. S.*

LILIUM GIGANTEUM.—I can corroborate all that Mr. Wolley-Dod has said respecting *Lilium giganteum* succeeding well as far north as Gordon Castle. I have seen it growing in one of the ploughmen's or cottar's gardens there, and flowering magnificently, with

seemingly but little attention; but I have always thought the climate in that district, from a few miles east of Gordon Castle to as far west as Nairn, and as far inland as the foot of the hills of "Birnie," to be much more genial than anything to be found for many miles further south. *Chas. Simpson, Newby Hall Gardens, Ripon, Yorks.*

THE ORCHARD-HOUSE IN FEBRUARY.

WHEN recently looking through the orchard-houses in the gardens of Gunnersbury House, I was struck with the beauty in the bloom of the Peaches, Nectarines, and Plums grown in pots at the time the flowers were fully developed. I could not help remarking to Mr. James Hudson that the trees were worth growing in this way for their floral beauty alone, for the branches of most of them were literally wreathed in blossoms of varying shades of pink and rose. We are so accustomed to regard such trees as fruit-producers, that we are apt to overlook the service they render when in full bloom. They render two series of services; but a due estimate of the first is obscured by the more utilitarian character of the second.

What are the laws operating to determine size in the blossoms of Peaches and Nectarines? Apples, Pears, Cherries and Plums all show variations in size: it is the blossoms of Peaches and Nectarines which display most colour, though the roscate tints found on the exterior surfaces of the blossoms of some varieties of Apples give them a very gay appearance.

Of the large-flowered Peaches grown at Gunnersbury House, one of the most conspicuous is Early Alfred, the flowers large and of good form, the centre of the corolla a little darker than that of the circumference. The Nectarine Peach puts forth large bold blossoms, and they have a striking appearance. Dr. Hogg has large deep-coloured blossoms for a Peach, it is a second early variety, good cropper, and Mr. Hudson speaks favourably as to its quality. Rivers' Early York is also a fine large-flowered variety. Early Silver has large flowers, and they are of a delicate pink tint. Mr. Hudson thinks very highly of Dr. Hogg as a flowering Peach, it was the most striking in the whole collection.

Two varieties were conspicuous for their small blossoms, viz., Crimson Galande and Magdala, the latter the deepest in colour, but probably Nature provides an equivalent in that these varieties produce showy fruits.

There were several small-blooming sorts, such as Victoria, quite small, but deep in colour, and a free setter; Advance, also small, but with a dark centre and stamens; Stanwick Elruge, quite small, sets freely, but it stones very indifferently, only two or three fruits on a tree. This appears to be a peculiarity of this variety, and it is perhaps difficult to assign a cause for this failure to stone. Mr. Hudson is experimenting with a view of overcoming this defect. Dryden is also quite small-flowered; Balgowan is the same, but the blossoms are deeply coloured; Improved Downton is also a small-flowered variety. Mr. Hudson hazarded the opinion that as a rule the small-flowered Nectarines set their fruit more freely than do the large-flowered varieties; it would be interesting to know if this is borne out by general observation and experience.

Mr. Hudson considers Amsden June to be the most reliable early Peach; next to this he puts Early Beatrice, though it is not one of the most reliable as a cropper, but useful on account of maturing its fruit early.

What is the cause of bud-dropping in Peaches? and especially so in the case of some of the American varieties. Waterloo and Alexandra are both bad bud-droppers. Some of the English Peaches do the same, but not to the extent the two American varieties named do. It is exasperating to a gardener who has healthy trees in pots, and which promise to be laden with blossom, to find them dropping their buds to a serious extent just when expansion is expected. Is this peculiarity characteristic of the twain American varieties mentioned above under all conditions of culture, and if so, is it traceable to some association with heredity?

Of the large-flowering Nectarines, the new Cardinal produces fine blossoms; they are very pretty, and of a delicate pink tint. Byron also has large blossoms, but rather deeper and brighter in colour than those of Cardinal; Rivers' Early is another large-flowered variety; Rivers' Orange has large, delicate pink blossoms; Pineapple also, and it is very free of bloom; Lord Napier is another of this character. Cardinal, says Mr. Hudson, is the earliest Nectarine, it is ripe twelve days before Early Rivers; and this in its turn precedes Lord Napier by a like deviation of time. Cardinal has begun to colour its fruit before that of Lord Napier has finished swelling.

The blossoms of Plums are very much alike, there is little if any perceptible difference in point of size and tint, in the varieties in the Gunnersbury House orchard-houses. Reine Claude de Comte Athems, has large white blossoms, which are produced in abundance; it is a fine late red Gage Plum, freestone, and of the best quality, and seems to do admirably under the restrictions of pot-culture. Mr. Hudson remarked, that all Reine Claude Plums when grown in the open are of excessive growth, hence they are oftentimes indifferent setters. Jefferson and Rivers' Early Prolific, with others, were seen to be very free of bloom. Mr. Hudson takes great delight in the pot-culture of Plums; he states he had no idea so much could be done with them under the control of pot-culture, and this fact is admirably illustrated when the trees are carrying most gratifying crops of ripe fruit. R. D.

NURSERY NOTES.

A CALL AT "WEBB'S," WORDSLEY.

The words "Webb's seeds" are familiar to most railway travellers, and quite recently I made a call at this colossal establishment, near Stourbridge, to see the Primulas and Cinerarias.

The first sight of the huge blocks of seed warehouses reminded me of an American "sky scraper." I had previously heard that Messrs. Webb & Sons were great at Primulas, Cinerarias, Cyclamens, and Calceolarias, and this proved to be true, for they appear to be extremely fastidious in selecting only the very best strains of each variety to grow for seed purposes. The stocks were grown thoroughly well in a series of light, airy greenhouses, specially devised for the purpose, the necessary selection and roguing being rigorously carried out.

The Calceolarias were the cleanest and best grown plants I have ever seen. The seeds were sown on June 3, and are now contained in 8-inch pots to flower.

The Cinerarias were equally good, enormous, well-marked flowers, in self and various colours, on clean, dwarf, compact plants, with healthy foliage. The Stellata section, also a fine strain, had a house specially to itself.

Primulas, too, had evidently been good in bloom, and were ripening their seed-pods. One named Mafeking was quite a new, warm colour, of compact habit, and the flowers are well set up above the foliage.

Cyclamens are chiefly kept to three distinct self colours, viz., Mont Blane, a grand white; Vesuvius, not well named, a dark crimson; and Rose Queen.

There were houses of Gloxinias and Begonias making their growth; tree and other Carnations, and a host of other flowering plants for seed-production.

A hurried run through the seed warehouses revealed an enormous output of farm and garden seeds. For instance, there were some 2000 sacks of Webb's Imperial Swede seed; each sack weighs 200 lb.; and this variety holds the record for the heaviest weight per acre, viz., 56 tons. Two hundred tons of Mangold seed were in stock, named Lion, one of Messrs. Webb's own raising.

Something like 7000 tons of seed Potatoes are sold annually.

Senator, a new garden Pea, was described as being a great acquisition; and another new second early Marrow Pea is to be brought out next year. About 150 women are employed all winter hand-picking garden Peas.

I could not reach the seed farms and trial grounds at Kinver, some 1500 acres in extent. W. C. M.

ROYAL HORTICULTURAL SOCIETY.

[GENERAL MEETING TO DISCUSS THE QUESTION OF THE PROPOSED SITE FOR A HALL AND OFFICES IN VINCENT SQUARE, WESTMINSTER.]

A GENERAL MEETING of this Society was held at the London Scottish Drill Hall, Buckingham Gate, Westminster, on Friday afternoon, March 21, to consider a report from the Council on the subject of the proposed new Hall for the Society. Sir Trevor Laurence, Bart., the President, occupied the Chair; and there was a very large attendance of Members of the Council and Fellows.

The preliminary formalities having been completed, Sir Trevor Laurence addressed the meeting—

The President's address and resolution. Baron Schröder's letter.

The President's resolution seconded by Sir William Thiselton Dyer. The King's Goodwill. The Reserve fund.

Mr. Shea objects, and proposes the adjournment of the meeting, for the purpose of obtaining the votes of all the Fellows, in which he is supported by Mr. Bennett-Poë, Sir Alexander Arbuthnot, and Mr. Gordon.

Sir Michael Foster on the situation, he supports the Resolution.

Mr. Arthur Sutton, Dr. Masters, Mr. Ker, the Dean of Rochester, and other speakers.

The meeting became impatient, uttering cries of "Vote! Vote!"

The original resolution and the amendment again read.

The amendment formally put to the meeting. A few votes only were recorded in its favour.

The President's resolution carried by an overwhelming majority, amid signs of enthusiasm and gratification.]

THE PRESIDENT'S SPEECH.

THE PRESIDENT said:—Ladies and Gentlemen, I have a motion to lay before this meeting, but I have some introductory remarks which I desire to make before stating the terms of the motion which I shall propose. I venture to consider, and I think the Fellows of this Society who are present will consider, that to-day we have to arrive at a decision of considerable importance,

and I confess that I approach the task of proposing this motion with a sense of considerable responsibility. Up to the present time, fortunately, I think the action of the Fellows of this Society has been on the whole unanimous. We have had very few points on which any serious divergence of opinion arose; but in carrying out a work of importance in a Society like this, it is almost impossible that this should continue to be invariably the case. We cannot expect when important questions arise such as that which has arisen now, to have complete unanimity in regard to the feeling of the Fellows of this Society. At the same time I should be the last to fail to recognise, what I believe the Fellows of the Society who are present will recognise, that whatever differences of opinion there may be, they are in no way incompatible, whether you take this view or that, with an earnest desire for the welfare of the Society. I venture to hope that we have no reason to anticipate a very heated discussion on this occasion. I venture even to suggest that in our discussions we might set an example to an august body which meets in this immediate neighbourhood. (Laughter.) So far as I am personally concerned, I shall to the best of my ability avoid saying a single word which can in any way, so far as I can understand it, offend anybody who is here present.

Now I think you will agree with me that the Centenary of such a Society as ours, with its Fellows numbering 6,000 to 7,000, is a great occasion. So far as the Society goes, I do not think a more important occasion is likely to occur for a great number of years; and I cannot help believing that the large majority of those present will desire to see this great occasion suitably celebrated. And may I ask—What is the position of this Society? As it has grown in numbers, so, I believe I may say, it has grown in repute, until it may be truly said that both at home and abroad it has become the recognised head of the horticulture of the United Kingdom, and, indeed, of the Empire.

In such a Society the general policy to be adopted must necessarily be submitted to, and be approved and adopted by, a general meeting of the Fellows; but the details of whatever decision a general meeting of the Fellows may come to, and the carrying out of those details, would naturally be left in the hands of the executive, that is to say, of the Council.

I do not myself doubt for a moment that many of the Fellows think that either alternative proposal for celebrating the centenary of the Society—whether it be a Hall with offices, or a new garden—would be desirable in itself; but unfortunately, the position of the Society is such that we cannot have both at once, and the question is, to which of the two shall priority be given? I venture to express what is my own opinion, and the opinion of several of my colleagues on the Council, that looking at the necessity for a strong horticultural society in the British Isles, and to the past history of the Society since it left South Kensington; to the unbroken flow of new Fellows, to the good reputation in which the Society now stands, and to the ever-growing interest in horticulture throughout the Empire, I venture to think that the Society will possess both a new Hall with offices, and a new garden, before this century has passed its youth.

I am anxious, as far as it is possible to do so, to approach this question dispassionately, and to put before you such considerations as appear to me reasonable in our discussion of the question as to which of these two desirable objects we shall give priority. The question I have to ask myself is this:—Are there weighty and sufficient reasons why priority should be given to the scheme for building a Hall and offices for this Society? I venture to think there are. We have met together to-day in a hall where we habitually have our fortnightly meetings, and I remember that when we came from South Kensington we thought ourselves very fortunate in being able to secure the use of this hall. At the same time, it has been felt all along—and I think reasonably and naturally felt—that this hall was at best but a makeshift. It is obvious that it has very considerable disadvantages. It is often very cold and draughty, and therefore bad for plants; the light is exceedingly bad. To-day it happens to be relatively bright, but very often the light is very bad in this hall, and it is impossible to see the tints of the flowers. Then we have entirely outgrown the dimensions of this hall, and besides not offering adequate accommodation, it is very noisy, which makes it very inconvenient for our meetings and lectures.

We have had offered to us a site of adequate dimensions, at a moderate rent, for a term of 999 years, which is practically a freehold. It is situated within 400 yards of Victoria Street, in a rapidly improving and a rapidly developing neighbourhood. It possesses good light and aspect.

THE PRESIDENT here turned to a plan on the screen behind him, similar to that given in the *Gardeners' Chronicle* on p. , March , 1902; and after explaining the approaches and other circumstances connected with the proposed site, he proceeded:—Well, Ladies and Gentlemen, that is the site, and that is its position. Owing to the great increase of the Society which is taking place—as you will remember there was an addition of 900 new Fellows last year

to which must be added already this year 300—the great increase of the Society has entailed necessarily a great increase of office work; and it is absolutely impossible to carry on our office work in the present offices in Victoria Street. I occasionally, of course, go into the office during working hours, and I always find our invaluable Secretary at work with three clerks sitting at the table with him, because there is nowhere else to put them; and it is absolutely impossible for him to have a private interview with anybody when he may so desire. Our Society has completely outgrown the old offices, and there are no means of getting any additions to the office in the present building. What we want to do, if the Fellows accept the proposal which I shall presently place before you, is to provide a new and convenient Hall; and we believe, in doing that, we shall hold out an inducement for a not inconsiderable number of new Fellows who might not otherwise have joined us. Everything that adds to the comfort and convenience of a well-ordered Society, no doubt adds to the number of its Fellows; and there is every reason to believe—while I do not doubt, whether we have a new Hall or not, we shall have a constant flow of members—still proper accommodation for a Society considerably advances its interests.

Then, last but not least, we have promises of £8,000 already, and that without issuing any appeal. They were voluntary offers, and they were not made in answer to any appeal.

The arguments in favour of a new garden are mainly these. The advantages of Chiswick have gradually ceased as London has drawn nearer and nearer every year. We are being surrounded with buildings and houses, and in addition, the drying of the soil has been increased by the excessive drainage which all building-land undergoes. Nobody disputes that such a Society as this, which is scientific as well as practical, should have a thoroughly good garden; and whether you decide upon a Hall to day, or whether you do not, I sincerely trust that before many years have elapsed we shall have a good new garden, which we require for conducting the work which our Society ought to be conducting—scientific, experimental, and practical. Still, notwithstanding that, we have Chiswick for another twenty years. Although Chiswick is very much degenerated from what it was formerly, I am sorry to say that when I conferred with the Duke of Devonshire's solicitors and surveyors, we learnt that the surrender value of Chiswick, if it were to be surrendered now, is a much less valuable asset than we had been led to suppose. In addition to that, during the year 1900 exhaustive enquiries were made in every direction near London, and it was not found possible to select a suitable site. The moment you got suitable land, the necessity for good railway accommodation became a prime consideration, and the great difficulty was to secure a site which was convenient of access and which should not be inordinate in price. The result was that a balance of considerations, and weighing the advantages and the disadvantages, left in my mind a decided preponderance in favour of a Hall and Offices.

Now, I should not be acting fairly, as it seems to me, if I did not say a few words about a gentleman who has been one of the best friends this Society has ever had—I mean Baron Schröder. Baron Schröder is an enthusiastic horticulturist, and he has been all along most anxious to promote the welfare of this Society. I remember the days which few here present I think remember, the dark days when we were at South Kensington. I remember that the Society was absolutely on its last legs, and the question was how long it could continue to exist. At that time nobody gave us greater help or better advice for the welfare of the Society than did Baron Schröder; and I see other gentlemen present—Sir William Thimelton Dyer and Sir Michael Foster—who did yeoman service, and rescued the Society from a collapse. And it may not be known, but I think I may reasonably mention it, that there were not a few gentlemen interested in the welfare of this Society, who put their hands in their pockets and made donations to the Society, which alone enabled it to be carried on.

I should not be doing justice to Baron Schröder if I did not read a statement which has been placed in my hands by the Secretary of this Society, on the connection of Baron Schröder with the committee for the selection of a site. I will read it, because I was not always able to be present, and am not, therefore, of my own personal knowledge, acquainted with all that happened. This is the statement:—

"It is almost a year ago that Baron Schröder asked the Council to appoint a committee to act with him in looking for a site and in studying the question. From the first appointment of that committee until the middle of January, when he was obliged to go to the South for his health, Baron Schröder not only devoted himself to investigate the financial position of the Society, and each site which was proposed, but actually laboured to inspect every new site, refusing to be disheartened by repeated failure and disappointment. He learned of the site in Vincent Square, and so highly did he think of it, and knowing the rapid manner in which the slums are being swept away in the neighbourhood, and fine residential mansions taking their place, he

thought that he would personally secure it, lest it should slip through our hands; so he secured it on a lease for 999 years. He is ready at a moment's notice to hand it over to the Society; over and above that, he has promised £5,000 towards the building fund, if the site be accepted.

In America, horticulture has met with many generous benefactors, but there is no one in Great Britain who would have acted in such a spirit of public-minded liberality and of personal effort in the cause of horticulture as our friend Baron Schröder has done."

I believe that is a perfectly accurate statement. The Council now venture to submit to the Fellows the question of the policy to be adopted at the present juncture of the affairs of the Society. The details must, as it seems to me, necessarily be left to the Council, who are, I hope, trusted by the Fellows; for if they are not, the proper course to adopt would be for them to replace the present Council by men whom they do trust—men in whom they have confidence. But the details, whether structural or financial, cannot be either satisfactorily or advantageously discussed at a general meeting.

I may mention an analogous case in connection with St. Bartholomew's Hospital where it is proposed to spend a quarter of a million. In that instance the details were left to the Executive of the Hospital. I mention that to show that details could not be discussed in a general meeting. Should the Fellows pass the vote, with moving which I shall conclude my speech, I will briefly mention the general lines upon which the Council, so far as they have been able to decide as yet, would propose to act. Rough preliminary plans and estimates have been prepared, but they are not yet in such a state as would justify their being submitted to this meeting. The Council are advised that such plans, or others of a similar character, would involve an outlay of not less than £25,000. They propose to ask for from the Fellows and their friends. They have already promises of £5,000 from Baron Schröder, and £1000 from Mr. Elwes, similar sums from Mr. Sherwood, and Mr. Sutton. I think we can look confidently to the great interest which is taken in horticulture by the vast number of wealthy Fellows of this Society to produce the not very extravagant sum of £25,000 for a purpose which is so essential and necessary for the interests of this Society.

The Council desire to avoid, if possible, drawing upon the accumulated funds of the Society. They would not do that if it could be avoided. They are of opinion that the rates and taxes, and maintenance charges for the Hall and offices, could easily be defrayed out of income, and they hope that some revenue may be derived from letting and similar sources, when the building is completed.

BARON SCHRÖDER'S LETTER.

I have received a letter from Baron Schröder which he says I am at liberty to read to the meeting. I interpret that as a desire that I should read it, and therefore I will proceed to read it:—

"CAP MARTIN HOTEL, PRÆSTENTON, A.M.

"March 17, 1902.

"MY DEAR SIR TREYOR,

"You are no doubt aware that I have been in active correspondence with Mr. Wilks since I left London for the south of France; in his last letter he informs me that the Ecclesiastical Commissioners have accepted my offer for the St. Vincent Square site.

"I am delighted at this news, as I am sure that under the circumstances we could not have a better position for our Hall, or one that is more likely to improve.

"Mr. Wilks informs me that the Council have called a meeting of the Fellows for Friday next, the 21st inst., and I am anxious to write to you a few lines for the occasion, as, I regret to say, I shall not be able to be present personally. I trust that the Fellows will approve of what has been done, and come forward liberally in subscribing the necessary funds for the purpose of erecting a suitable building on the grounds. If I have come forward in subscribing £5,000 for that purpose it is, I can assure you, in consequence of my great love for horticulture, and my high esteem for the old Society, which will next year have existed for a hundred years. I feel that it is totally unworthy of so great a Society that it should not have its own home, but still remain at the Drill Hall, which is quite inadequate for our wants. I cannot but believe that the Royal Horticultural Society, with its large and increasing number of members, will be easily able to collect the sum of £20,000 to £25,000, which is necessary for our purpose, and to which £5,000 have already been subscribed.

"One word more about the St. Vincent Square site. We have there not only splendid light for our shows, but we shall probably have a chance of utilising the Square for our exhibitions in case the Temple Gardens should fail us, which, I think, is a very great point in its favour.

"You may make use of this letter in any way you may think proper, and wishing you most heartily a successful meeting on Friday.

"I remain, yours very sincerely,

"(Signed) J. W. SCHRÖDER."

The resolution I have to propose is to the following effect:—

"That the Fellows of the Royal Horticultural Society, in general meeting assembled, accept the principle of building a new Hall in celebration of the centenary of the Society, and hereby adopt the report laid before them this day by the Council. They also desire to record their appreciation of Baron Schröder's public-spirited conduct in securing a site, which they hereby adopt, and they authorise the Council to take the necessary steps to enable the building to be opened in the year 1904."

Sir WILLIAM THIMELTON - DYER seconded the motion. He said: I do not know that I was ever called upon on any occasion of public business to fulfil a duty with more pleasure than I do that which I have been invited to undertake this afternoon. I have looked forward to this day with long-expected expectation. It is thirteen years since we were turned out of our quarters at South Kensington neck and crop, I think I may say into the street. It was due to you, Sir, to Baron Schröder, to Mr. Veitch, to my friend Sir Michael Foster, and a body of gentleman, who did not despair that the wreck of the Society was saved, and that it was enabled to build itself into the efficient institution which exists to-day. When we departed from South Kensington, we were determined that the past should be buried for ever, and that a new policy of vital activity and real work should be that which should animate us; that policy, Sir, under your consistent and persistent guidance, has been a success, and now, instead of being in an insolvent position, we are a flourishing and prosperous corporation. You are asked to-day to realise what you are, and what you have become, and to show to the public some outward and visible sign of the place you hold in the community of this great country. We left South Kensington because we would no longer be at the beck and call of every caprice of fashion. In these more humble and less attractive quarters, we have devoted ourselves to horticulture, pure and simple; we have not had our ears deafened by a Horse Guards' band whenever we have been looking at a Daffodil. The public have taken us at our word, and we are now in a position which, thirteen years ago, we could not have believed possible; now we have to consolidate our position and crown the edifice, and see if we cannot with reasonable comfort extend the operations of the Society, which is at once learned and practical, by providing suitable accommodation for our labours. We want a place where our committees can meet and deliberate in privacy; we want a place for the Lindley Library, where it can be of use to our Fellows; and we want a place where our officers can conduct their business with propriety and with some comfort. Is it too much to appeal to people when the gift is positively dangling over our head? I will not pursue the theme with any elaboration, because I feel that it already commends itself to your common-sense. The Council have always been consistent in this matter, as in every other part of the policy that they have pursued. What did the Council say in 1888, when I had the honour to be a member of it? We told you that the first work of the Council was to secure a suitable home for the Society. Through the kindness of the London Scottish Rifles, and I think owing to the personal kindness towards some of us of Colonel Eustace Barbour, we obtained the use of this hall. At first there were no skylights, and it was through the intervention of Colonel Balfour that some skylights were put in. We had only a temporary agreement

for this hall, as we fully recognised its drawbacks.

The following year his present Majesty the King, then Prince of Wales, was so kind as to open our Temple Show. We presented to him an address, in which we asked his co-operation in regard to the policy which I hope will be finally decided upon to-day. What did the King say?

THE KING'S GOOD WILL.

We all know that His Majesty is not a person who talks lightly, and in the few words he addressed to us in the Temple Gardens, he said: "I sincerely hope that your labours in this respect (that is, in obtaining a Hall) may be successful, for I feel sure that such a Hall will be of the greatest use and advantage." May we not re-echo and emphasise the words His Majesty himself used, and agree with words instinct with common sense, that the provision of a central Hall for the Society will be of great use to the horticultural community.

Owing to the staunch co-operation of the trade, persons interested in horticulture have had an opportunity, fortnight after fortnight, of seeing here everything that is novel, and everything that is excellent in the horticulture of the country. The busy man who could not range over the nurseries, and cover considerable distances, could come here and see everything he desired to see. Then the amateur who is proud of his garden could, in ten minutes, see the results of the work of a lifetime. It is true that the light is not all that could be desired, and that the tints of the flowers are not seen at their best, but for all that the place has been invaluable.

But there is more than that. When you do good work, consequences flow which you did not expect. I am told that this place has been such a rendezvous, such a centre of interest for the horticultural world, that in the early hours of the morning, before the more fashionable people come, this is practically a Horticultural Exchange. You see people you want to see, and you at once arrange with them. Only the other day I had a considerable demand for plants. A member of my staff came here and saw one man, and in a few minutes the thing was done. So that you have actually a centre of horticultural life, and you have all the making of a great society, except a proper casket to contain it. I hope you will support cordially and unanimously the policy which the Council have laid down. I must confess—freely confess—that the scheme that has been put before us far surpasses anything I expected. Sir Michael Foster and myself have seen many sites slip away, and thought it would be almost impossible in the immediate neighbourhood to secure one which had all the advantages of the Vincent Square site, which I must confess far exceeds what I thought would be within the range of practical possibility.

I cannot sit down without re-echoing what the President said about Baron Schröder. I remember the time when we were working for the resuscitation of the Society, how we were supported by his enthusiasm, his commonsense, and his counsel, which was always at our disposal, never faltering in working for the ultimate welfare of the Society. And now, seeing the way in which he has come to our aid, I think we should really be throwing God's gifts away if we rejected the scheme which has been put before us this afternoon.

THE RESERVE FUND.

I should like to say a word or two, in conclusion, in reference to the Reserve Fund, which I had some part in initiating. When we came here this was an insolvent society,

and it was by the private kindness and liberality of many members of the Council that the Society was able to face its banker with anything like a fair face. The Council in that way cleared off its immediate responsibilities. As soon as we became solvent, I urged upon the Treasurer, Dr. Morris, to commence a reserve fund, the ultimate destination of which should be the construction of a hall, and if you will turn to the accounts of the Society for 1890, you will find an item, "To reserve fund for Horticultural Hall, £66 and a few odd shillings." That was the beginning of the reserve fund that I am told has now risen to the substantial figure of £11,000. That reserve fund is really ear-marked for a Horticultural Hall, but I am perfectly ready to agree, if the Society will raise the necessary money, it may not be necessary to touch that reserve fund. I would wish to impress upon the Society—that the reserve fund was accumulated for the purpose of a hall, and that it ought not to be alienated for any other purpose. I am sorry to have intruded so long, but I would urge upon you to support this most critical, this most fundamental motion.

THE AMENDMENT.

Mr. C. E. SHEA moved the following amendment:—

"That this meeting stand adjourned to this day fortnight, at the same place and time if possible, and that in the meantime copies of the Report be sent to every Fellow of the Society."

Mr. SHEA said: We should, I suggest, look at this matter simply as Fellows of the Society desiring to devote ourselves to evolving that which is best for the Society. Of course, on matters of policy, individuals will always differ. When I was on the Council, in February, 1900, I assented to the declaration of the Council that a garden was absolutely essential for this Society, and I am not prepared in March, 1902, to swallow the words I used in February, 1900. I would say "look before you leap," and not "leap before you look." Then I think that in such a crisis in the history of the Society we should refer this matter to the whole of the 7,000 Fellows throughout the country. There you have the fundamental reasons, apart from all personal matters, which led very much to my retirement from the Council. The President has told us that, on the balance of advantage, a Hall is to be preferred to a Garden. I cannot forget that with equal, if not even greater eloquence, he told us a Garden was rather to be preferred than a Hall. It is always open to everybody to change his mind. I am in no way quarrelling with Sir Trevor if his mind has changed; but I am waiting to see if the step proposed to be taken by the Society at this crisis is one to be taken without obtaining the approval of those Fellows who are asked to do it. If I see that secured, I have nothing more to say. We have had the point put before us as to whether it shall be a Garden or a Hall. I do not intend to discuss that question. But I must say, let us not, in our desire for a Hall, render it impossible for a Garden to be created hereafter within such a time that we may hope to see. Looking at the financial aspect of the matter, figures have not been placed before us in any detail. Our position at the present time has been roughly declared to be that we have a booming success in new Fellows, and an income of £2,000 a year, and that altogether we are in a state of such efficiency that we almost need not look at financial considerations. We must not forget that we have achieved all this under existing

conditions of the experimental garden at Chiswick, an admirable *Journal* which is so ably conducted by our energetic Secretary, Mr. Wilks; and our shows in this very much depreciated Drill Hall. We are asked to destroy all this. Now let us look at the leap that the Council are asking us to take. We have £2,000 on account of income, and an accumulation of some £13,000 odd, although £2,000 of that is in some trust and cannot be touched. The scheme as introduced will cost us an annual increase of our necessary expenditure which cannot be less than £1,000 a year. That is to say, that £1,000 a year additional is to be spent on account of a new hall and offices.

It has been said that we have £8,000 promised, and it is suggested that we could spend £8,000 from the reserve. Sir William Threlton Dyer has, I think, expressed an objection to that fund being trenched upon, but if you once accept this scheme, can you be sure that you will not be compelled to trench upon it? When you have taken over your liabilities, and have added your rates and taxes, you will find that you will have to go on. There is no retreating, and your liability will be, roughly, £25,000. Suppose you have to go to the reserve fund for the next £8,000. What follows? You take £8,000 out of the reserve, which is then reduced to £3,000; in fact, you take more than £8,000, because of the difference in the price of Consols, and you get so much less, *pro tanto* of accumulated interest. If you spend £1,000 in rates and taxes and up-keep—and we have had none of these details placed before us—we shall get much less accommodation. If you take £1,000 from your income, what prospect is there of a garden in the future? However much we may disguise it, the real *crux* of the matter is—is there to be a hall or a garden? Two years ago we said a garden was absolutely necessary; that is what we have to decide to-day.

My plea to-day is simply this. Let the Society be consulted, and let it speak for itself. Look at the prudence as well as the justice of this plea. If you go on to-day, you will create a certain sense of discontent among those who are not here.

Several Fellows: No, no. They have all had due notice.

Mr. SHEA: You in this room cannot do this thing. In an able article in the *Gardeners' Chronicle* it was stated that those who have called for a hall must be prepared to act up financially to what they have called for, or a very serious loss will occur. That is perfectly true and frank. I say, go safely forward with the assent of the whole Society; and for the sake of doing the thing properly and orderly, let the matter be placed before a meeting of the Fellows, when they have had a full and complete copy of the report before them. We have communications in the Press, but those do not reach every Fellow of the Society. I now feel that I have discharged my duty as a retired member of the Council.

MR. J. T. BENNETT-POË: I beg to second the amendment, and I do so for the same reasons expressed by Mr. Shea. I do so advisedly, seeing that we are proposing to become involved in such a large annual expenditure, there should, in my opinion, be an appeal to the whole body of Fellows.

SIR ALEXANDER ARBUTHNOT: I support the amendment. It is, I think, a most reasonable amendment, and I cannot help feeling that if it is rejected by this meeting, the meeting will have done an act of what I may call great unwisdom. The great body of the Society,

not only the country members who are away from London at this moment, but the members in this hall, have no information, no practical information, as to the details of this proposal. It is a very large leap, and it appears to me that it is absolutely a leap in the dark, and I cannot see, how we, as reasonable men, can reject the very moderate amendment which has been moved by Mr. Shea, that another fortnight's time be allowed, in order that the great body of the members of the Society may be made acquainted with what is being done. I would have supported this amendment even if no reference had been made to the great body of members in the country. So far as the members present at this moment are concerned, it is very important that they should all know how matters stand more clearly than we know at present. I would earnestly suggest that this amendment be adopted. I should be the last man—and it is not without hesitation that I venture to come forward in opposition to the Council of this Society, for I am well aware what admirable work you, Mr. President, and our friend the Secretary, have done for this Society. I was for two years a member of the Council, and I am well aware of the merits of those who are conducting this Society.

But this is a very important case, and I would ask you to pause in order to enable the Fellows generally, those who are present as well as those who are away, to become acquainted with the facts which ought to be laid before them. I therefore strongly urge that the amendment be not rejected.

SIR MICHAEL FOSTER: I hope this amendment will not be pressed. I have really some difficulty in knowing what the amendment means. Does it mean that this meeting is not competent to decide upon the important affairs of the Society? There are only two ways by which a Society can carry on its work—one is by meeting, publicly called for that purpose, and these who are not there are alone responsible for not being there; another way is to send out a voting paper to each member of the Society. Now, I venture to think that on such a question as this, the latter is the very worst possible way in which you can get the decision of a society. The people who are here are the people who are most interested, those whose voice ought to have the greatest weight; and I cannot conceive any just objection to a vote of this meeting on so important a matter as this—a just and proper vote of the Society, upon which the Council is justified in acting. Is that the meaning of the amendment, or is it that a fortnight's delay is necessary, as the matter is not ripe for action? As my friend Sir William Thiselton-Dyer has said, we have been talking about this Hall ever since we left South Kensington. I can repeat what he said, that when we left South Kensington we felt we must look out as soon as possible for a suitable Hall with central Offices for the Society, and that we took this Hall only as a makeshift. We have had it before our minds all these years. Surely we do not want another fortnight to consider it! Although the question as between a Hall and a Garden has not been raised directly, yet the question really has been raised. We have been reminded that two years ago we discussed this question of a Garden, and I remember speaking with such force as I had in favour of a Hall, and a Hall has been the one great want of the Society.

Financially, I have rather gathered from Mr. Shea that, prosperous as we have been in the past, we are going on the downward path

directly we get an adequate Hall with all its conveniences. That is the very thing to make us still more prosperous, and still more able in the very near future to get that experimental garden which I have quite as much at heart as he has. I imagine I am nothing if I am not scientific, and I feel very strongly that it is one of the functions of this Society to carry on experimental investigations in horticulture in a garden of their own. I recognise that this cannot be done now, adequately, at Chiswick; and I look forward to an adequate Garden being, at some time, within our means. But that is only one part of the functions of this Society. Another part which appeals to me quite as much as the scientific idea, is seeing new and beautiful flowers, beautiful fruits and vegetables, in a Hall of our own. That is a matter which, I think, on the whole, is the more important of the functions of this Society. It is that by which we are enabled to appeal to the public. As to the details, it is not for me to go into them. I feel perfect confidence in the Council, and I venture to think that the Society would make a profound mistake if they did not accept Baron Schröder's admirable offer and take this hall.

Dr. MASTERS: In the first place, I have a bone to pick with Mr. Shea, and I would remind him that an editor is quite an impersonal being. I have the fullest sympathy with those gentlemen who want a garden; I believe we all have sympathy with them. The only point upon which we differ is this, that we must wait for a garden. We have got a garden, such as it is, and we can very well wait until we have built a hall sufficient for our needs. At present we are only in lodgings. Mr. George Paul, the late Mr. G. Deal, and myself, were answerable for taking this hall. We never looked upon it except as a stop-gap. It has been a good stop-gap, but now, like all lodgers, we are beginning to think we ought to have a home of our own. That is the way with all British people. When they have got a house, they begin to think they will have a garden; and when they have a garden, they think they will have a greenhouse too. I am sure I am expressing the general feeling when I say, that I hope Mr. Shea and Mr. Poë will reconsider their position, and come back to the Council. We respect their motives, and if they will come back to the Council and help us to get a hall, they can help us to get a garden. This is an opportunity for getting a hall which is not likely to occur again. It is for us to accept this opportunity. I have attended fourteen or fifteen meetings of the committee appointed to find a site, and I have arrived at the conclusion that this is the site, under existing circumstances, for this hall. Do not let us miss this opportunity. If we do, gracious knows how long it will be before we get a proper hall and a proper garden.

Surgeon-Major INCE: Mr. President, I must say that I have considerable sympathy with the amendment. Major Ince was proceeding with his speech when the President interposed, and the Major resumed his seat.

MR. GEORGE GORDON SUPPORTS THE AMENDMENT.

I should like to say, said Mr. Gordon, how heartily I support the very moderate and, as I believe, very desirable amendment which Mr. Shea has proposed. It is of the highest importance that we should have a definite statement from the Council that we shall not spend any part of the reserve fund. I need not say that one of the reasons of our leaving South Kensington was because many years ago too much money was

spent by the Council; in fact, they spent beyond their means. Sir William Thiselton-Dyer has spoken of the marvellous success which has attended the Society since we left South Kensington. I fully agree with him, and I have no doubt whatever that one reason for that success has been that the Society has devoted its attention wholly and solely to horticulture. Before we embark on a scheme we ought to know how we are going to raise the money, and that we should not spend an absolutely necessary reserve, and thereby be deprived of a reserve should it be required. It is for this reason that I rise to support the amendment, so that the whole of the Fellows shall have an opportunity of knowing all the facts.

MR. SUTTON ON THE PROXY VOTE.

Mr. ARTHUR SUTTON: I believe I am right in saying that the Council have no power to take any decision away from us. Only last year an innovation was made, giving the Council the option of taking a decision away from us, and to refer it to the country at large. I think it is a most serious responsibility for the Council to assume. All the members could have got here if they had wished to. Some of us have come from great distances at considerable inconvenience, and I have delayed my own departure for Egypt so as to be present to-day. If this matter were referred from us to the country, it means that the enormous majority of those who really have not had any opportunity of taking a close interest in the affairs of the Society, and who do not know the ins-and-outs of this matter, will be asked to record their vote. It is quite possible that their votes might be in the majority; but why should the wishes of others who know all the facts be swamped by such a vote? I really hope that the Council will consider that this is a matter that we who are present can settle.

As regards the question of finance, it is quite true that those who are not on the Council are working in the dark. But that is only relatively so. If Baron Schröder is willing to accept the financial responsibility himself, it shows, in my opinion, that it is a perfectly safe financial step. It has been said that during the past two years the Council have changed their minds. Well, I think the Council deserve our thanks for more accurately gauging the feelings of the members at large. I heartily join in the wish of Dr. Masters that these two Fellows who have taken such an interest in, and have rendered most valuable services to the Society, will come back to the Council and help to carry through this most excellent work.

The DEAN OF ROCHESTER: Mr. President, I hope you will not lose this grand opportunity. When I look back in my eighty-third year and see what a large part of my life—and what a delightful part of my life—has been spent in gardens and with gardeners, I feel constrained, having a conscience, and being a philanthropist, to make every effort which I think will tend to spread this enjoyment amongst the people. Something has been said about looking before you leap. On many occasions that does not do. I am an old fox-hunter, and there are occasions if you look before you leap you will never see the hounds again! We have a good horse, and we have got the man to whom we owe a great debt of gratitude. Having got the horse, I hope we shall quit him at the fence.

Mr. R. P. KER, of Liverpool: Mr. President, I am a country member, but I have all the facts in my own mind. I am convinced that the action of the Council is the right

policy. The proposed Hall is in the right place, and we shall be doing something for the prosperity and success of the Society if we adopt the resolution to-day.

The PRESIDENT then put the amendment. Only eleven Fellows voted for it; the others voted against it. On the original resolution being put, the President, amid much cheering, declared it carried with three dissentients out of a meeting of about three hundred Fellows.

The proceedings then came, to an end, with a vote of thanks to the President.

SOCIETIES.

ROYAL HORTICULTURAL.

MARCH 25.—A very large display of spring flowers, Orchids, plants, and fruits was made at the fortnightly meeting of the Committees on Tuesday last in the Grill Hall, Buckingham Gate, Westminster.

The ORCHID COMMITTEE recommended as many as fifteen awards to novelties, and seven medals to groups.

The FLORAL COMMITTEE recommended one First-class Certificate and two Awards of Merit; also nine medals.

Neither the FRUIT AND VEGETABLE COMMITTEE nor the NARCISSESS COMMITTEE recommended any award to a novelty, but the first-named body recommended the award of a Gold Medal to Messrs. JAS. VEITCH & SONS for a collection of excellent Apples.

There was a somewhat persistent rumour throughout the day that the King would visit the hall, but His Majesty did not do so. The rumour was created by an enquiry that had been received from a news agency, which suggested that His Majesty had made arrangements to come.

In the afternoon Professor CARR delivered a LECTURE upon "The Defences of Plants," which was illustrated by some unusually good lantern-slides.

Floral Committee.

Present: W. Marshall, Esq., Chairman; and Messrs. W. B. May, C. T. Drury, Geo. Nicholson, John Jennings, J. F. McLeod, W. Howe, John A. Nix, Chas. Jeffries, C. J. Salter, W. Bain, H. J. Cutbush, F. Page Roberts (Rev.), Chas. E. Shea, W. P. Thomson, E. H. Jenkins, W. J. James, R. Wilson Ker, Chas. Black, and R. H. Wallace.

Pteris (Andromeda) floribunda as bushes $3\frac{1}{2}$ feet high, and as much through them, was shown by Messrs. JOHN WATERER & SONS, Ltd., Bagshot, Surrey. There were thirteen fine specimens full of flower just about to expand.

Hardy Rhododendrons, Azaleas, from Messrs. R. & G. CUTBUSH, Southgate Nurseries, Middlesex, were very gay, and the flowers were all orange-yellow coloured or white, or both. The orange-yellow variety was Atteclarende of the "Ghent" type, and very fine; Atteclarende is white, with yellow upon upper petal, and fragrant (Silver-gilt Flora Medal).

Messrs. W. CUTBUSH & SON, Highgate, London, N., and Barnett, Herts, made a beautiful show with forced trees and shrubs. Included were double-flowered Peaches in variety, Gueldres Roses (*Viburnum Opulus*), *Magnolia Soulangeana*, *Wistaria sinensis*, *Cercas luteola*, with flowers of pale creamy-yellow, afterwards becoming white; *Cytisus Laburnum*, *Ribes albidum*, and others; double red Thorns, *Staphylea colehica*, *Rhododendron Daviesii* (Ghent section), white, with yellow on upper petal; R. Anthony Koster, &c.; standard Peaches and Thorns, and other things helped much to secure the effect obtained (Silver-gilt Banksian Medal).

Violet The Dowager Lady Williams Wynn was shown from the Dowager Lady's garden by Mr. G. J. SQUIBB. The flowers are double like New York, but very much paler in colour. Several other varieties of Violet came from the same garden.

Hyacinth flowers from bulbs that have been in the ground for four years, being top-dressed only each autumn, were shown by Dr. BONAVIA, Westwood, Richmond Road, Worthing, to illustrate what good results are thus obtained (Vote of Thanks).

Messrs. LINDEN & CO., Brussels, exhibited a handsome Hemanthus named H. maximus, with an exceedingly large truss of bright coral-coloured flowers.

Lachenalia W. Watson, shown by Mr. F. W. MOORE, Glasnevin Botanic Garden, Dublin, has pure yellow flowers of unusual width.

Captain HOLFORD, C.I.E., Tetbury, Gloucestershire (gr., Mr. A. Chapman), exhibited a few choice seedling *Hippeastrums*: Monarch, deep crimson; Sir Christopher Wren, of the same colour; Nell Gwynne, white, with red stripes; Countess Grey, of similar type, but with less colour; and Mr. R. S. Holford, greenish-white.

Lapageria rosea, The Kooll variety, of which flowers were shown by Sir TREVOR LAWRENCE, Bart., Burford, Dorking, is a very fine variety indeed. The blooms exhibited were 4 inches across.

Messrs. JNO. LAING & SONS, Forest Hill Nurseries, London, S.E., exhibited a group of miscellaneous stove and greenhouse plants; also a group of Japanese Maples in pots, and several plants in flower of *Fothergilla alnifolia*, &c. (Bronze Banksian Medal).

Forced Roses from Mr. GEORGE MOUNT, Canterbury were very fine, and included the varieties Mrs. John Laing, La France, Ulrich Brunner, and a large number of other choice varieties (Silver-gilt Banksian Medal).

Messrs. THOMAS CRIPPS & SON, Tunbridge Wells, showed *Retinospora obtusa* Crippsii, a fine plant, 6 ft high, and a number of smaller specimens, about 1½ ft. high, a golden variety of the type. This firm also showed *Acer palmatum rosea marginata*, A. *Palmatum palmatifidum*, A. P. *cratægifolium*, A. P. *flavescens*, and the very distinct and handsome A. *japonicum*; also some nice plants of *Rogeria cordata* in bloom.

Cinerarias were shown by Messrs. H. CANNELL & SONS, Swanley, Kent, who had a group of plants on the floor near to the entrance door. The strain was that known as "Stellata," with graceful, branching habit of growth, and numerous flowers. There was much variation in colour and in the size of the blooms (Silver Banksian Medal).

Messrs. HUGH LOW & CO., Bush Hill Park Nurseries, Enfield, exhibited a group of forced trees and shrubs containing some very fine plants of standard Peaches, *Prunus triloba*, &c., also dwarf plants of *Cytisus racemosus*, *Hydrangea hortensia*, *Magnolia Soulangeana*, M. *conspicua*, *Mollis Rhododendrons*, *Malmaison Carnations*, &c. (Silver Banksian Medal).

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, exhibited a few very strongly grown plants of selected seedlings of *Clivia*, all of which were of good merit; also plants of *Grevillea rosmarinifolia*, *Corylopsis pauciflora*, *Atragene austriaca*, an anemone-like plant, with azure blue flowers, 6 ins. high; and *Rhododendron indicum* var. *Kempferi*, a Japanese *Rhododendron* with numerous, rather small flowers, light red colour; and R. *linearifolia*, a species with inconspicuous flowers of botanical interest only.

Messrs. JAS. VEITCH & SONS, also showed a group of *Hyacinths* in pots, which constituted a very choice collection of varieties. A few double varieties were included, but the majority of them were single-flowered (Silver Flora Medal).

Mr. LEONARD BROWN, Brentwood, Essex, exhibited a collection of *Hyacinths* and *Narcissus*, all of them very fine. The *Narcissus*, which were very strong, were forced flowers from British-grown bulbs (Bronze Banksian Medal).

Messrs. GEO. JACKMAN & SON, Woking, Surrey, showed a collection of alpine plants in bloom, very neatly arranged. There were *Anemone Pulsatilla alba*, a rare plant; *Primula denticulata alba*, several *Fritillarias*, *Muscari*, and many other choice plants (Silver-gilt Banksian Medal).

Messrs. R. WALLACE & CO., Kilnfield Gardens, Colechester, exhibited a group of hardy flowering plants in pots. Amongst these were *Fritillaria citrina*, F. *aurea*, F. *pubida*, and F. "Tuntasia," (?) a new one, with small flowers of exceeding dark brown colour; *Fritillaria (Korolkowia) discolor*, *Iris reticulata*, I. *sindjarensis*, I. *tubergeniana*, &c.; also varieties of *Chionodoxa*, *Scilla*, *Narcissus*, &c. (Silver Banksian Medal).

Mr. ARTHUR W. WADE, Riverside Nurseries, Colchester, exhibited *Iris reticulata*, *Chionodoxa Lucillie*, and C. *Sardensis*, *Anemone blanda*, *Narcissus*, &c., in pots (Vote of Thanks).

Messrs. BARR & SONS, King Street, Covent Garden, London, W.C., exhibited a fine single *Hyacinth*, "Rosita," with very faintly tinted flowers, also a very good form of *Chionodoxa Lucillie*, with unusually large flowers. Also a few choice hardy plants, &c.

Messrs. THOS. S. WARE, Ltd., Hale Farm Nurseries, Feltham, had a very large exhibit of hardy flowers. Amongst these were *Narcissus* in pots, including the fine variety Golden Spur, also *Fritillarias*, *Primroses*, *Anemones*, and *Primula Forbesii*.

Awards.

Fritillaria askabadensis.—A pale yellow-flowered species, of which we hope to publish an illustration and description in an early issue. From Miss WILLMOTT (Award of Merit).

Hippeastrum Sir Christopher Wren.—A bright rosy-crimson-coloured variety, with large flowers of very good form. From Captain HOLFORD, C.I.E. (Award of Merit).

Iris Warleyensis is a new species, shown by Miss WILLMOTT, Warley Place, Warley, Essex. The species resembles *I. orchoides* generally, but is of different colour, being almost azure-blue, with a beautiful purple zone on the fall. From Miss WILLMOTT (First-class Certificate).

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshaw, J. Charles, worth, H. Ballantine, J. Douglas, W. Cobb, J. Cypher, F. W. Ashton, H. A. Tracy, H. J. Chapman, F. A. Rehder, W. A. Binney, G. F. Moore, E. Hill, J. W. Odell, W. Boxall, W. H. White, W. B. Latham, J. G. Fowler, H. Little, and W. H. Young.

There was a very fine show of Orchids.

Sir TREVOR LAWRENCE, Bart., President, Burford, Dorking (gr., Mr. W. H. White), exhibited an interesting group of rare Orchids, in which were *Celogyne pulchella*, resembling a C. *elata*, of small growth, and with upright spikes of snow-white flowers with nearly black blotches on the lip; *Celogyne sparsa*, with many spikes; *Cirrhopetalum fimbriatum*, with fourteen umbels of dark red flowers; the pretty natural hybrid *Odontoglossum Dormanianum*, the richly-coloured *Cattleya Trianel* "Reine des Belges," a very large-flowered *Odontoglossum crispum*, O. × *Andersonianum*, &c.

Messrs. JAS. VEITCH & SONS, Chelsea, were awarded a Silver Flora Medal for a fine group, composed principally of hybrids. Of these were *Laelio-Cattleya* × *Digbyano-Schroderae*, with pretty, fringed-lipped, bluish-white flowers; varieties of L.-C. × *Myra*, with yellow flowers with crimson lip; L.-C. × *Pieanus* (L.-C. × *Pallas* × L. *cinnabarina*), L.-C. × *Clonids*, several L.-C. *Highlowiensis*, the rich yellow *Dendrobium* × *Ophir*, D. × *Socius*, D. × *Stratus*, *Epidendrum* × *Clarissa*, *Cypripedium*, and a singular little terrestrial Orchid with white flowers.

H. T. PITT, Esq., Kosslyn, Stamford Hill (gr., Mr. Thurgood), staged an effective group, for which a Silver Flora Medal was awarded. The back row was of *Vanda suavis*, *Dendrobiums*, and other tall growers, and in front were arranged a good selection of the showy *Odontoglossums*, *Epidendrum alatum*, *Cymbidium eburneum*, *Dendrobium atrovioletaceum*, *Sophranitis grandiflora*, &c.

Messrs. SANDER & SONS, St. Albans, had an extensive group, in which the hybrid *Phaius*—Norman, Marthae, &c., were a feature. In the group were two very fine and dissimilar varieties of *Miltonia* × *Bleuana*, *Cynoches Amesiana*, with a raceme of singular greenish flowers, spotted with purple; *Odontoglossum hystrix* Fascinator, with the sepals almost covered with chocolate-purple colour; O. h. *prionopetalon*, having large flowers with fringed petals; O. × *cuspidatum*, good O. *crispum*, a pretty hybrid with finely blotched flowers named O. Horsmuni, varieties of *Lycaste Skinneri*, *Vanda Parishii*, &c. (Silver Flora Medal).

Messrs. CHARLESWORTH & CO., Heaton, Bradford, showed a good group, in which the most prominent plants were *Epi-Laelia* × *Sylvia* (E. Cooperianum × L. *cinnabarina*), with upright spike of many flowers, with dark reddish-orange sepals and petals, and rose-purple lip with white centre; *Odontoglossum* × *Adrianne* Duchess of Cornwall, a very fine yellowish flower, prettily spotted; *Odontoglossum triumphans* Wilsoni, a grand flower, with broad, richly marked segments. An interesting incident in regard to it is that the original exhibitor, W. Marshall, Esq., who got a First-class Certificate for it in 1889, identified it. Other good *Odontoglossums* were included, and a fine lot of varieties of *Phaius* × *Norman*, *Cattleya* × *Louis* Chaton, *Angraecum Sanderianum*, *Dendrobium* × *Apollo album*, D. × *Ainsworthii* *intertextum* *grandiflorum*, *Cypripedium* × *Berkeleyi* (*bellatulum* × *Boxall*), C. × *Godiva* (*niveum* × *Chamberlainianum*), and other species (Silver Flora Medal).

W. P. BURKINSHAW, Esq., the West Hill, Hesse, Hull (gr., Mr. Barker), secured a Silver Banksian Medal for a group of very fine and excellently-grown *Dendrobiums*, in which D. × *splendissimum* *flavescens*, D. × s. Hesse variety, D. × *Rubens grandiflorum*,

and D. x Jessie were specially fine. Three good plants of D. nobile nobilius were also in the group.

J. COLMAN, Esq., Gatton Park, Reigate (gr., Mr. W. P. Bound), was awarded a Silver Banksian Medal for an excellent group, in which the *Cymbidium cburneum*, C. x Lowio-cburneum, *Odontoglossums*, and white *Ceoloyne cristata* were effectively arranged.

Messrs. STANLEY, ASHTON & Co., Southgate, showed a group of the showy *Laelia Jongheana* and *Cymbidium x cburneo-Lowianum* (Silver Banksian Medal).

Messrs. LINDEN & Co., Brussels, showed *Odontoglossum crispum* "Miss Lucienne Linden" (see Awards); O. c. Emperor of India, a large blotched flower; O. x loochristiense "Etoile d'Or," a bright yellow, blotched flower; *Dendrobium Wardianum* Lindeni, a large, finely coloured flower; and *Phalænopsis amabilis Rimestadiana*, perhaps the largest and best form of that fine species.

M. FLORENT, CLAES Brussels, showed *Odontoglossum x Adriane Pollux*, a large, white, sparsely spotted form; O. x A. Remus, O. crispum Trianei, and other good *Odontoglossums*.

Messrs. HUGH Low & Co., Bush Hill Park, showed *Lycaste x Ballie*, *Cypripedium x Shillanum*, *Laelia x Ione*, and *Cattleya Trianei* "Phyllis," a pretty peach-blossom-tinted flower, resembling C. Schroderae.

F. W. MOORE, Royal Botanic Gardens, Glasnevin Dublin, sent the singular *Gongora charontis*.

Captain HOLFORD, Westonbirt (gr., Mr. Alexander), showed *Dendrobium x Sibyl magnificum*, with a very finely flowered pseudo bulb, over 3 feet in length.

G. F. MOORE, Esq., Bourton-on-the-Water (gr., Mr. Morris), showed as *Phaio-Cymbidium x Chardwarsense* a very beautiful hybrid, of the general habit of *Phaius x Ashworthianus*, and with similar large yellow flowers, faintly striped with red, and purple, yellow, veined lip; supposed to be between *Phaius grandifolius* and *Cymbidium giganteum*. In the face of the experience in crossing *Zygopetalum Mackai* without effecting much change in structure, it cannot easily be decided.

W. B. LATHAM, Esq., Botanic Gardens, Edgbaston, Birmingham, showed two forms of *Cypripedium x edgbastense* (nitens x *Chamberlainianum*), and C. x *Deedmanianum*.

C. CARRUTHERS, Esq., Reigate, showed a good *Odontoglossum triumphans*.

Mrs. HAYWOOD, Woodhatch, Reigate (gr., Mr. C. J. Salter), sent *Dendrobium x Wardiano-Hildebrandi*.

Awards.

FIRST-CLASS CERTIFICATE.

Odontoglossum x Adriane "Mrs. Robert Benson," from Captain HOLFORD, Westonbirt (gr., Mr. Alexander).—This beautiful variety received an Award of Merit when Captain HOLFORD showed it with its first flowers, February 26, 1901. Good cultivation has shown it to be one of the finest yet seen. Flowers large, cream-white, prettily marked with reddish-brown.

Laelio Cattleya x Rosalind "Princess of Wales" (L.-C. x *Dominiana* x C. Trianei), from Messrs. JAS. VEITCH & SONS.—Flowers very large, the petals broad and flat. Sepals tinged with rosy-lilac; petals almost entirely suffused with dark purplish-crimson. Front of the large labellum ruby-purple; disk yellow. A very remarkable improvement on the original illustrated in the *Gardeners' Chronicle*, January 2, 1897, p. 3.

Laelio-Cattleya x Digbyano-Schroderae (L. Digbyana x C. Schroderae), from Messrs. JAS. VEITCH & SONS.—This is in form, and in the fine fringing of the lip, similar to L.-C. x Digbyano-Mossiae, but lighter in colour. Flowers white, tinged with pale rose; fragrant.

Cattleya amethystoglossa Sanderi, from Messrs. F. SANDER & SONS.—A beautiful albino, well worthy to rank with C. *intermedia alba* or *Parthenia*, than which it is likely to continue far more rare. Flowers of typical shape, good size, and pure white. The coloured form is also known as C. *guttata* Prinzii.

AWARDS OF MERIT.

Cattleya x Parthenia vernalis (x *calummatia fimbriata* x *Mossiae*), from the Right Hon. Lord ROTHSCHILD, Tring Park (gr., Mr. E. Hill).—A charming white flower, similar in shape to *Cattleya Mossiae*, but of wax-like texture; lip beautifully veined, with soft-rose colour.

Odontoglossum loochristiense "Lady Victoria Greenfell," from Captain HOLFORD.—This closely resembles the handsome O. l. *Roehfordianum*, which was considered the best O. x loochristiense. Captain HOLFORD's plant bore a very strong spike of bright yellow flowers, handsomely blotched with red-brown; lip white with dark-red blotches, and fimbriated like some of the O. x *Adriane*.

Sophro-Laelia x leta Orpetiana, from Captain HOLFORD.

—A charming dwarf hybrid, with large rose-tinted scarlet flowers, in form near to *Sophronitis grandiflora*.

Dendrobium x Rolfeae roseum, from W. P. BARKINSHAW, Esq., Hesse, Hull (gr., Mr. Barker).—A fine variety of the natural hybrid between D. *pruinulium* and D. *nobile*. Flowers like those of a good D. *nobile*, but without the dark coloured base to the lip.

Odontoglossum crispum Miss Lucienne Linden, from Messrs. LINDEN, Brussels.—The little plant shown gave promise of very remarkable development when strong, the colouring being rich and very distinct. Flowers white, a large port-wine coloured blotch occupying the central third of the sepals, the petals having similar blotches over one-third of their surface. There were also a few purple lines at the base of the petals, and some small spots on the sepals and lip.

Cypripedium Lawrenceanum, from Messrs. LINDEN, Brussels.—A good form of the type, which had not previously been certificated.

Odontoglossum x Ruckerianum Pittianum, from H. T. PITT, Esq., Stamford Hill (gr., Mr. Thurgood).—Flowers very large, soft yellow, heavily tinged with purple at the back, and profusely spotted with purple-brown, and tinged with rose colour.

Cypripedium x William Pitt, from H. T. PITT, Esq., probably C. *Dayanum* x *Tautzianum*.—A very fine white flower, with extended, broad petals. Petals and upper sepal tinged with rose, and bearing minute purple spots. Face of the lip pale rose. Foliage like that of C. *Dayanum*, very handsome.

Laelio-Cattleya x Myra Princess of Wales (C. Trianei x L. flava), from Messrs. JAS. VEITCH & SONS.—Flower of good form, light orange colour, with claret-crimson lip.

Narcissus Committee.

Present: H. B. May (Chairman); Revs. G. H. Engleheart, S. E. Bourne; Miss Willmott, and Messrs. W. Wilks, W. Poupert, W. T. Ware, W. Goldring, J. D. Pearson, Robt. Sydenham, J. T. Bennett-Pot, J. Pope, W. F. M. Copeland, G. Reuthe, Jas. Walker, P. R. Barr, and C. Searse Dickens.

Owing to the decided check of the last few days, fewer Narcissi were in evidence than might have been expected, but one or two good stands of cut blooms and flowers in pots served as a reminder of the oncoming Daffodil season.

The Committee made no awards to new seedlings, but the following were given to groups:—A Silver Flora to a large and representative collection sent in beautifully fresh condition by Miss CURREY, Lismore, Ireland; a Silver Banksian to Messrs. BARR & SON for a well-staged bank of fine examples, notably some very brilliant *Gloria Mundi* and *Constellation*, an *Incomparabilis*, with very broad white segments and orange crown; and a Bronze Banksian to L. BROWN, Esq., for a small select group.

An interesting paper was read by P. D. WILLIAMS, Esq., Lanarth, St. Keverne, on "Merodon equestris," the dreaded Narcissus-fly. Growing samples of affected bulbs, with the living larva, were shown; and the paper appeared to demonstrate that much is still open to question of the precise manner in which the insect makes its attack, notwithstanding the full monograph on the subject of Dr. Ritzema Bos.

Fruit and Vegetable Committee.

Present: George Bunyard, Esq. (Chairman), and Messrs. Jos. Cheal, H. Esling, S. Mortimer, Alex. Dean, H. J. Wright, Geo. Kelf, H. Markham, Ed. Beckett, F. Q. Lane, Jas. Smith, G. Norman, Jas. H. Veitch, and A. H. Pearson.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, were awarded a Gold Medal for a magnificent collection of eighty-eight dishes of Apples, all of them of capital quality, and perfectly preserved. Particularly noticeable were Blenheim Orange, Fraise d'Hoffinger, Ribston Pippin, Golden Noble, Emperor Alexander, Bramley's Seedling, Lane's Prince Albert, Sandringham, Newton Wonder, Lord Derby, Tyler's Kernel, Cox's Orange Pippin, Bess Pool, Sturmer Pippin, &c. There were also some Pears, including Directeur Alphonse, Catillac, Uvedale's St. Germain, Bellissime d'Hiver, and Maricette de Millepieda.

Messrs. J. CHEAL & SONS, Lowfield Nurseries, near Crawley, exhibited fruits of several varieties of Apple, including Armored, Sturmer Pippin, Boston Russett, Duke of Devonshire, Crawley Reinette, &c. The last-named variety is a capital keeper of the type of Blenheim Orange.

A Cultural Commendation for Mushrooms was recom-

mended to Lord ALDENHAM, Aldenham House, Aldenham, Elstree (gr., Mr. Beckett). These were distinctly "Cluster" Mushrooms, and showed excellent cultivation.

R. M. WHITING, Esq., Credenhill, Hereford, exhibited two dozen dishes of Apples. All of these were good and well preserved specimens. Newton Wonder, Mabbott's Pearmain, Sandringham, and Lane's Prince Albert being particularly good (Silver Knightian Medal).

The Lecture.

THE lecture was given at 3 P.M., by Prof. CART, and consisted of a series of illustrations of what is now known as "Ecology." Groups of plants growing in various situations were shown on the screen, and an explanation of their peculiarities was given, according as they grow in heaths, marshes, pools, sandhills, rocky coasts, sea-beaches, and so forth. The illustrations were excellent, and showed not only the general character of the localities, but also the structural adaptations to aquatic, dry, or saline situations.

Obituary.

EDWARD ROBERTS.—Horticulturists in Kent and Surrey will learn with deep regret of the sudden death on the 19th inst. of Mr. Edward Roberts, who for close on half a century was employed with the firms of John Cattell, Thos. W. Edmunds, and latterly Thos. W. Edmunds, Limited, of Cattell's Original Nurseries, Westerham, Kent. His kindly and obliging disposition, combined with an ever-ready desire to impart the benefit of his long practical experience to all lovers of gardening, will be cherished by the many friends with whom he came in contact.

CHARLES FISHER.—We regret to have to announce the death on the 21st inst., of Mr. Fisher, for many years the head of the firm of nurseries at Sheffield, known as Fisher, Son, and Sibray. Mr. Fisher, who was in his seventy-ninth year of his age, was famous for his knowledge and skill in the cultivation of hardy shrubs. He was the raiser of numerous Hollies of first-rate importance. We hope in a future number to give further particulars of his career.



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period March 16 to March 22, 1902. Height above sea-level 24 feet.

| 1902. | DIRECTION OF WIND. | TEMPERATURE OF THE AIR. | | | | TEMPERATURE OF THE SOIL at 9 A.M. | | | |
|-----------------------|--------------------|-------------------------|-----------|----------|---------|-----------------------------------|-----------------|-----------------|-------------------------------|
| | | At 9 A.M. | | DAY. | | At 1-foot deep. | | At 2-feet deep. | |
| | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. | At 1-foot deep. | At 2-feet deep. | At 4-feet deep. | Lowest TEMPERATURE ON GROUND. |
| | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. | At 1-foot deep. | At 2-feet deep. | At 4-feet deep. | Lowest TEMPERATURE ON GROUND. |
| MARCH 16 TO MARCH 22. | | | | | | | | | |
| SUN. 16 | N.W. | 47° 9 | 43° 4 | 55° 4 | 38° 5 | ... | 44° 7 | 44° 8 | 44° 3 |
| MON. 17 | S.W. | 49° 1 | 47° 7 | 61° 5 | 37° 0 | ... | 41° 6 | 41° 4 | 41° 3 |
| TUES. 18 | W.S.W. | 47° 8 | 42° 7 | 50° 3 | 39° 5 | ... | 45° 9 | 45° 2 | 44° 7 |
| WED. 19 | S.S.W. | 49° 0 | 44° 4 | 56° 1 | 43° 7 | ... | 45° 4 | 45° 2 | 44° 9 |
| THU. 20 | S.S.W. | 47° 0 | 45° 1 | 49° 4 | 41° 3 | ... | 45° 1 | 45° 5 | 45° 0 |
| FRI. 21 | W.S.W. | 45° 9 | 42° 1 | 51° 1 | 37° 2 | ... | 43° 9 | 45° 3 | 45° 0 |
| SAT. 22 | S.S.W. | 43° 5 | 40° 2 | 48° 3 | 35° 5 | ... | 42° 9 | 44° 8 | 45° 2 |
| MEANS | ... | 47° 3 | 43° 7 | 53° 2 | 39° 0 | ... | 41° 7 | 45° 1 | 44° 8 |

Remarks.—The first part of the week was fair with some bright sunshine; the last part has been stormy. There was a thunderstorm on the 21st, when hail fell as big as small marbles.

GENERAL OBSERVATIONS.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending March 22, is furnished from the Meteorological Office:—
 "The weather during this period was very rainy over Ireland and Scotland, and rain also fell rather frequently in the western parts of England. Over our northern and eastern districts, however, the rain was mostly confined to the later days of the week, the earlier part being generally fine and dry. Thunder and lightning occurred in various parts of central and south-eastern England on Friday afternoon.

"The temperature was again above the mean, the excess ranging from 4° in the Midland Counties and England, N.E., to 1° in Ireland, S. The highest of the maxima were, with few exceptions, registered on the 17th. They were as high as 62° in Scotland, and England, N.E. and S., and 61° in England, E. and N.W., and Ireland, N., while elsewhere they ranged from 60° in the Midland Counties, to 55° in the Channel Islands. The lowest of the minima were recorded either on the 21st or 22nd, and varied from 23° in Scotland, E. and W., to 33° in England, S. and S.W., and to 40° in the Channel Islands.

"The rainfall was less than the mean over all the eastern, central, and south-eastern parts of England, as well as in the Channel Islands, and only just equal to it in England, N.W. Elsewhere the fall exceeded the normal amount, the excess in Scotland, N., being very large.

"The bright sunshine varied greatly in different districts, but exceeded the mean over central and northern England, and also over the greater part of Scotland. The percentage of the possible duration ranged from 50 in England, N.E., 43 in England, N.W., and 37 in Scotland, E., and the Channel Islands, to between 25 and 23 in Ireland, and to 19 in Scotland, N.

THE WEATHER IN WEST HERTS.

THE recent remarkable period of warm weather, which had lasted exactly a month, came to an end on the 21st. Since that date colder conditions have prevailed, and on two nights the exposed thermometer indicated 11° of frost. The ground, which at the beginning of the week had been unusually warm for so early in the spring, has gradually become colder, and is now at about a seasonable temperature, both at 1 and 2 feet deep. The weather has been rather showery, but on only one day was there any rain worth mentioning. The total fall amounted to rather less than half an inch, but only about a tenth of this quantity has come through the bare soil percolation-gauge, and still less through that covered with short grass, showing how dry the ground had for the time of year previously become. The sun shone on an average for nearly three and a half hours a day, which is somewhat below the mean duration for the latter half of March. The wind, which came almost exclusively from some point between south and west, varied greatly in strength. During the early morning hours of the 25th, with a change in direction, the wind at one time rose to the force of a moderate gale—direction W.N.W. This is the highest wind recorded here since December 9 last. The atmosphere continued for the most part unusually dry for the latter end of March. *Anemone pulsatilla* came into flower in my garden on the 24th, or eleven days earlier than last year. *E. M., Berkhamsted, March 25, 1902.*

MARKETS.

COVENT GARDEN, MARCH 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 revise the list, and 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 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—AVERAGE WHOLESALE PRICES.

| | s.d. s.d. | | s.d. s.d. |
|--------------------|-----------|----------------------|-----------|
| Acacias, per doz. | 6 0-8 0 | Hyacinths, white, | |
| Arum Lilies, per | | per dozen | 10 0-12 0 |
| dozen | 8 0-12 0 | — colours, per | |
| Azaleas, per doz. | 30 0-60 0 | dozen | 8 0-10 0 |
| Cinerarias, per | | Hydrangeas, per | |
| dozen | 4 0-6 0 | dozen | 9 0-12 0 |
| Daffodils, double, | | Narcissus, single, | |
| per dozen | 6 0-8 0 | per dozen | 6 0-8 0 |
| Genistas, pr. doz. | 8 0-10 0 | Tulips, all colours, | |
| | | per dozen | 0 9-1 0 |

VEGETABLES.—AVERAGE WHOLESALE PRICES.

| | s.d. s.d. | | s.d. s.d. |
|---------------------|-----------|--------------------|-----------|
| Artichokes, Globe, | | Onions, case | 6 6-7 0 |
| per dozen | 2 0-2 6 | — new, green, | |
| — Jerusalem, p. | | doz. | 1 6-2 0 |
| sieve | 1 0-1 6 | — English, per | |
| Asparagus Sprue, | | cwt. | 7 0 — |
| bundle | 0 10 — | — in bags | 5 0-6 0 |
| — English | 8 0 — | — picklers, per | |
| — Giant | 8 6-18 0 | sieve | 2 6-3 6 |
| — Paris Green | 4 6 — | Parsley, per doz. | |
| — Spanish | 2 0-2 3 | bunches | 3 0-4 0 |
| Beans, dwf., house, | | — sieve | 3 0-4 0 |
| per lb. | 1 1-1 6 | Farnips, p. cwt. | |
| — French, broad, | | bag | 2 0-3 0 |
| flat | 3 0-3 6 | Peas in lb. bags | 0 5 — |
| — Madeira, per | | in flats | 5 6 — |
| basket | 2 0-3 0 | Potatoes, per ton | 50 0-90 0 |
| Beetroots, per | | — new, per lb. | 0 2 ½ — |
| bushel | 1 3-2 0 | — Frame, per | |
| Brussels Sprouts, | | lb. | 0 5-0 6 |
| sieve | 1 0 — | — new Teneriffe, | |
| Cabbage, p. tally | 4 6-6 0 | per cwt. | 14 0-16 0 |
| Carrots, per doz. | | Radishes, p. doz. | |
| bunches | 3 0-4 0 | bunches | 0 9-1 0 |
| — washed, bags | 3 0-3 6 | Rhubarb, Yorks, | |
| — unwashed, per | | per dozen | 0 7-10 ½ |
| bag | 2 0-2 6 | — outdoor, doz. | 2 0-3 0 |
| Cauliflowers, doz. | 2 6 — | Salad, small, pun- | |
| — tally | 4 0-10 0 | nets, per doz. | 1 3 — |
| Celeriac, per doz. | 2 0 — | Savoy, tally | 2 6 — |
| Celery, per dozen | | Scotch Kale, bus. | 1 6-2 0 |
| bundles | 8 0-15 0 | Seakale, per doz. | |
| Chicory, per lb. | 0 2 — | punts | 15 0-16 0 |
| Coleworts, bushel | 1 0-1 6 | Shallots, per lb. | 0 2 — |
| — bag | 2 0-3 0 | Spinach, English, | |
| Cress, per dozen | | bushel | 2 6-3 6 |
| punnets | 1 3 — | — French, per | |
| Cucumbers, doz. | 4 0-6 0 | crate | 2 6-3 0 |
| Endive, new | | Stachys, lb. | 0 3 — |
| French, doz. | 1 0-1 6 | Tomatoes, Canary, | |
| — Batavian, per | | boxes | 3 6-4 6 |
| dozen | 1 6 — | Turnip-Tops, per | |
| Garlic, per lb. | 0 3 — | bushel | 1 0-2 0 |
| Horseradish, fe- | | — bag | 1 6-3 0 |
| rein, bunch | 1 3-1 6 | Turnips, per doz. | |
| Leeks, 12 bunches | 2 0-2 6 | bunches | 1 6-2 0 |
| Lettuces, Cos, doz. | 3 6 — | — bag | 2 0-2 3 |
| — Cabbage, doz. | 0 10-1 0 | — new, French, | |
| Mint, new bunch | 0 4-0 7 | bunch | 1 0 — |
| Mushrooms, house, | | Watercress, per | |
| per lb. | 0 8 — | doz. bunches | 0 6-0 8 |

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s.d. s.d. | | s.d. s.d. |
|-------------------|-----------|-------------------|-----------|
| Apples, home- | | Grapes, Gros Col- | |
| grown, Wel- | | mar, A., p. lb. | 3 0-4 0 |
| lington, per | | — B., per lb. | 1 6-2 0 |
| bushel | 8 0-10 0 | — Alicante, lb. | 3 0-4 0 |
| — Californian, | | — Almeida, per | |
| cases | 6 0-10 6 | 12 lb. | 6 0-8 0 |
| — Nova Scotian | | Lemons, per case | 9 6-15 0 |
| and Canadian, | | Oranges, Bitter, | |
| various, per | | case | 5 6-6 0 |
| barrel | 20 0-27 6 | — Denia, case | 12 6-35 0 |
| — Large Cookers, | | — Navel, per | |
| per bushel | 6 0-7 0 | case | 10 6-16 0 |
| Bananas, bunch | 6 0-10 0 | — Murcia, blood, | |
| — loose, p. doz. | 1 0-1 6 | case | 14 0 — |
| Cape Fruit | | — Tangierine, | |
| Grapes, case | 5 0-8 0 | per case (100) | 2 6 — |
| Peaches | 10 0-12 0 | Pears, Easter | |
| Pears | 6 0-10 0 | Beurre, in half | |
| Plums | 10 0-12 0 | cases & cases | 12 0-18 0 |
| Chestnuts, per | | Plums, each | 2 6-4 0 |
| bag | 15 0 — | Sapacalia Nuts, | |
| Cobnuts, Kentish, | | per lb. | 1 0 — |
| per lb. | 1 0 — | Strawberries, per | |
| Cranberries, per | | lb. | 3 0-6 0 |
| case | 12 0 — | Walnuts, per | |
| — quart | 8 0 — | bushel | 16 0 — |

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

| | s.d. s.d. | | s.d. s.d. |
|--------------------|-----------|---------------------|-----------|
| Anemones, per | | Mimosa, p. bunch | 1 0-1 6 |
| doz. | 1 6-2 0 | Narcissus, p. doz. | 1 6-4 0 |
| Arums, per doz. | 3 0-6 0 | Pelargoniums, | |
| Azaleas, per doz. | 4 0-6 0 | Scarlet, per | |
| Freelias, p. doz. | 2 0-4 0 | dozen | 6 0-8 0 |
| Gardenias, per | | Roses, Red, Gen- | |
| dozen | 1 6-2 0 | eral, per doz. | |
| Jonquills, p. doz. | 1 3-1 6 | blooms | 2 0-2 6 |
| Marguerites, Yel- | | Tulips, all colrs., | |
| low, per doz. | 1 6-2 0 | per doz. | 4 0-8 0 |
| — Star, per doz. | 1 6-0 0 | | |

REMARKS.—Grapefruits per case fetch 14s.; Egyptian, the best of Onions for culinary purposes are now coming in, and selling at 6s. 3d. per bag of about 1 cwt.; new green Onions per dozen bunches, 1s. 6d. to 2s. A few Kentish Broccoli are now coming in; Brussels Sprouts and Savoy are practically over for the season. The last Grapes from the Cape were wastey; some fine English black Grapes are now on sale. A consignment of Tasmanian Apples is expected to arrive in this country in the course of a few days.

POTATOS.

Dunbar Main Crop, 90s.; Up-to-Date, 80s. to 85s.; and other varieties, 45s. to 80s. Seed in variety, prices on application. *John Bath, 32 & 34, Wellington Street, Covent Garden.*

CLIVEAS.—I send you six spikes of seedling Cliveas. They have all been raised here. The flowers are cut from a batch of forty plants, exhibited at the Manchester Spring Show this week. *E. Rogers, Bridge Hall Gardens, Bury.* [The flowers are very good, and show excellent cultivation.]

ANSWERS TO CORRESPONDENTS.

BRYOPHYLLUM: L. W. What you send is unquestionably the old *B. calycinum* (not *B. proliferum*). It is propagated by little buds which form on the edges of the leaves. Botanists of the older school were very familiar with it as a lecture specimen.

CALANTHES: J. B. Our writer of "The Orchid House" Calendar gives seasonable directions for the cultivation of *C. vestita*, the deciduous species, in the issue for February 22, 1902, and it is touched upon at various seasons throughout the year. The pseudo-bulbs should be exposed to sunshine when resting, that is, at this season, and not in the shade, as was inadvertently there stated, and be kept dry at the root. The most suitable kind of soil for *Calanthes* is a friable, turfy loam three-quarters, used in a rather rough state, a small quantity of leaf-soil, and dried flaky cow-dung together a quarter, and a small quantity of sharp sand. The drainage should be ample, and one pseudo-bulb should be put into a 6-inch pot, and more of them into larger pots. Pot firmly. Repotting is performed in the spring as soon as signs of renewed growth become visible. The other species are evergreen, and when at rest the plants must not be deprived of water, but afforded as much as will keep the soil slightly moist. *C. x Veitchii*, a hybrid raised from *Limnates rosca* and *C. vestita*, is deciduous, and needs a treatment like that afforded *C. vestita*. Of *C. vestita*, numerous varieties exist in gardens. Our Orchid Calendar will contain directions in regard to the treatment of *Calanthes* from time to time.

LIME CUT SETS OF POTATOS: J. P. Lime is looked upon as a fungicide and bactericide, and in that way it is an advantage if applied to the cut surfaces of sets, and those in which the sprouts are broken off. At any rate, the tubers will not be injured by the lime.

NAMES OF PLANTS: C. C. Pilling. Probably *Festuca ovina*, or Sheep's Fescue.—*R. R.* All three varieties of *Odontoglossum triumphans*; No. 3, the dark variety, a very distinct form.—*J. F.* *Billbergia iridifolia*.—*F. J. T.* 1, *Clivia nobilis*, figured in the *Botanical Magazine*, t. 2856, as *Imatophyllum Aiton*; 2, *Farfugium grande*.

RUNNER BEANS: E. T. H. The growth would be slightly hastened by sowing the beans in pots or boxes an inch apart, transplanting them at the end of the next, or in the following month, when there is no longer any risk of losing the plants by frost. The plant does not succeed out of doors before the soil has become warmed to 50° at the least. Transplanted beans should stand at a distance of 6 to 8 inches apart in the drill, which should be taken out 7 inches deep, and only half filled in at planting time, the rest later.

VINE-BORDER DRESSING: J. P. Your master was quite right; the Grape-vine takes up lime, and the mortar-rubble supplies this substance, its effects lasting for years, only the quantity seems excessive. If the roots allow, it should be forked in. The dressing of surface soil may not then be needed.

VINE-LEAVES WITH WARTS ON THE UNDER-SURFACE: Reader. Caused by an excess of moisture in the air. Afford more air and less moisture in the house.

DIED.—On March 20, at Lesham Villa, Kew, Mary, widow of the late GEORGE EYLES, formerly superintendent of the Royal Horticultural Society's Gardens at South Kensington.

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.



VIEW IN THE GARDENS, SELSDON PARK, CROYDON: PHOTOGRAPHED BY J. GREGORY.

THE

Gardeners' Chronicle

No. 797.—SATURDAY, APRIL 5, 1902.

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DAFFODILS.

It is perhaps two years since I read a magazine article in which the writer was nonplussed by a quotation that referred to the Daffodil as a flattened white flower; and I have no doubt the great majority of his readers were equally out of sympathy with the old poet, whose knowledge of Daffodils was so scanty. Yet if they could have thrown themselves backwards through the intervening centuries, they would have discovered in the "parvi-coronata" section the true Daffodils. It is Gerarde we have in great measure to thank for the transference of the name to the Pseudo-Narcissus, which long after his time continued the bastard or false Daffodil when both sections were referred to. The word itself has been the occasion of much discussion as to its meaning and even its origin, but whether it is an "Asphodel" or a "Saffron-Lily," or what may be the meaning concealed in its sweetly-sounding syllables, is not the object of this paper to discuss. At the same time a suspicion, amounting almost to certainty, cannot be dismissed, that the name is a second-hand one, and of no very ancient date, say, about the middle of the sixteenth century. In the form of Daffadondilies, Tusser was the first, I believe, to use it for the Narcissus. The oldest known names for what we call the common Daffodil are "Crowbells," and Yellow Crowbells, in Gerarde's *Fable of Old Names*, distinctly said to be applicable to the yellow Daffodil. The common name of Narcissus biflorus would seem to be less ancient, but if it loses in age, as Primrose Peerelesse, it gains in prettiness. It has, moreover, another designation that carries us back almost to the days of Chaucer—"the floure Ionettis." There are other names, such as Rosen-Lilies, that prove Daffodil not to have been all-comprehensive. This designation recalls the lines of Drayton—

"See there be store of Lilies,
Called by shepherds Daffodillies."

And as a matter of fact, simple "Lilies" is still a name in use. If it were possible to accept Drayton as an irreproachable guide, see how it would clear, for instance, some of the puzzling things in *Izaak Walton*, as where he mentions the "Meadow chequered with Water-lilies and Ladysmocks," or "The boy gathering Lilies and Ladysmocks," commentators in both cases walking round the Lilies without noticing them among their feet, but charming us with delightful descriptions of Ladysmocks, Culver-keys, Gander-grass, and all the rest. Drayton, moreover, in another place, gives expression to the same words as Walton, where Dousabell is described getting—

"Sweete Cetywall,
The Honeysuckle, the Harlocke,
The Lily, and the Ladysmocke,
To deck her summer hall."

If we dared to say definitely, "These Lilies are Daffodils," how perfectly satisfying it would be.

Worth noticing, too, is the way the early writers attributed to the Daffodil a love of water. Thus, if we hark back to Spenser, he tells us of the black-browed Cymœnt—

"Where as she play'd
Amongst her watry sisters by a pond,
Gathering sweete Daffadillyes, to have made
Gay girlonds from the sun their foreheads fayr
to shade."

In the same sense it is named as one of the flowers in the garden of Adonis:—

"Foolish Narcisse, that likes the watry shore."

Inferentially, Bacon, too, says the same thing. "The flowers," he remarks, "that come early are Prime-Roses, Violets, Anemonies, Water-Daffadillies, Crocus vernus; and some early Tulips." And a minor poet expresses much the same idea:—

"So I the fields and meadows green may view,
And daily by fresh rivers walk at will,
Among the Daisies and the Violets blue,
Red Hyacinth and yellow Daffodill."

It is interesting also to note the great variety of plants deemed members of the Daffodil family. The Tulip, for instance, was first presented to English readers as a kind of Daffodil, and *Fritillaria Meleagris* as the Chequered Daffodil. The earliest names of *Sternbergia Clusiana* and the prettier and better known *S. lutea* were respectively the Persian and winter Daffodils. In like manner *Sprekelia formosissima* was first introduced to gardens as an Indian Daffodil; while that of Virginia is *Zephyranthes Atamasco*. Phillips very strongly recommended the Crown Imperial on account of its being "the largest and best kind of Daffodil;" and another sort commended by Evelyn was the Round-headed, or *Brunsvigia multiflora*. But it is only fair to say, if permission to rank as a Daffodil was easy to obtain, these old-fashioned botanists at the same time discovered a nice discrimination in finding names for favourite species. Thus the "Nonsuch," or Incomparable, applied to what is now called Sir Watkin, is amply descriptive for the period, and withal pretty. "Rush" Daffodil, or Spanish Trumpets, were in use earlier than "Jonquil." Nosegay Daffodils fitly describe *Narcissus Tazetta* and Milky Daffodil, *N. totus albus*. Pheasant's Eye used to be a common name for *N. poeticus*; and Chalice-flowers and Camel's-neck are quite antiquated, Hoop-petticoats being not quite so old.

What the future of the Daffodil is to be cannot be prophesied. White and primrose and yellow sufficed in the past, but now the variety that shows the most orange or scarlet is being discussed. "Lulworth," not a first-rate flower by any means, holding an enviable position on that account alone. But it must soon give place to the new and expensive hybrids that have been dispersed throughout

the length and breadth of the land; and the old-fashioned kinds with their quaint and pretty names bid fair to become too common for anything but every-day use. R. P. B.

NEW OR NOTEWORTHY PLANTS.

ACANTHUS ARBOREUS, FORSK.*

(See fig. 70, p. 222.)

THIS fine and very interesting species was first sent to Europe from Arabia petraea by the eminent and well known Professor G. Schweinfurth. It seems that it is one of the finest plants of the Flora in that dry and arid land. It grows also in some districts of Egypt, and here, at Naples, has proved to be hardy this winter. It is now in full flower with me, and seems to me so interesting as to be worth introducing to the readers of the *Gardeners' Chronicle*. It is an evergreen, very prickly and spiny shrub, growing rapidly during the summer, but arrested always by our rainy winter, and it does not suffer from a light frost, but it suffers in severe winters, when the thermometer registers below 3° min. Réaumur. In that case the foliage falls, and also the ligneous parts of the stems dry up. Nevertheless, the plant puts forth shoots in the following spring, growing in such a case with great rapidity, so that the new shoots have attained in July to a height of about 3 metres, or 9½ feet. This *Acanthus* is worth attention from lovers of interesting plants. It is a tall shrub, grows rapidly, bears large, long, lanceolate, very spiny, and undulate leaves, and in spring, about the end of February, long, cylindrical flower-heads, such heads bearing on the point of every branch a veritable armoury of daggers, stilettos, fishbones, and similar sharp things. The flowers appear first on the inferior part of the spike, and last a long time in full splendour. The corolla being unilabiate, is the only conspicuously coloured part of this strange flower-head. It is waxy-white at the base, and purple or carmine elsewhere, spatulate, a little trough-shaped, with the limbs incised, and the margins much recurved. It seeds freely in the latter part of the spring; the seeds are ripe in July, and grow easily, as do those of every other species of *Acanthus*. The leaves of *A. arboreus* are quite smooth, shiny, and absolutely hairless on the upper surface, but richly puberulent on the underside. Like the European perennial *Acanthus*, so also this species grows easily from root cuttings or fragments, if the operation be done in spring. If the root-stock of strong plants is gashed it produces many suckers, and if these are potted in March or April, and planted in a rather shady and humid place, one by one the branches will root freely, and grow away as if nothing had been done to them. I have cultivated this plant in the open and in pots with some success in a mixture of loam and granular sand. Its place during the cold season in England would be in the Cactus or succulent-house. It will grow very well in a room near the glass, as it requires as much light as possible. *Charles Sprenger, Vomero, Naples.*

* *A. ARBOREUS*, Forskahl, *Flor. Egypt.-Arab.*, 115.—Pubescent or glabrate, stout shrub 3 to 19 feet high. Leaves up to 12 by 6 inches (often only half this size), pinnatifid half-way down, or lobate with doubly spinous margin; petiole up to ½ inch long. Spikes 3 to 7, terminal, up to 6 to 10 by 2 inches, often pubescent or hairy; bracts 1½ by ½ inch, ovate-lanceolate, acuminate, with many strong spines on the margin ½ inch long; bracteoles 1½ by ½ inch, spinous on the margins. Posticous calyx-segment exceeding 1 inch in length, lanceolate, three-nerved, spine-tipped; anticus calyx-segment exceeding 1 inch in length, lanceolate, two-nerved; two innermost calyx-segments ¾ inch long, elliptic-lanceolate, mucronate. Corolla 1½ inch long, rose or pale purple. Capsule ½ by ½ inch. *Clarke, in Flora of Tropical Africa*, vol. v., p. 106.



FIG. 70.—ACANTHUS ARBOREUS. (SEE P. 221.)

FOREIGN CORRESPONDENCE.

NICE.—Perhaps the following remarks may be of use to Mr. W. H. Divers, who wishes to hear of Eucalyptuses likely to endure the English climate:—

In the *Bulletin de la Société Nationale d'Acclimatation de France*, October, 1901, he will find an interesting article on Eucalyptus by H. Morel, who for many years has made a collection of them. This gentleman, who cultivates them at Beyrouth, in Syria, has not, of course, opportunity there to try their resistance to much cold; but he names the following, from the experience of others, as being the hardiest, and in this order: *E. urnigera*, *Mazelliana* (?), *coceifera*, *viminalis*, *amygdalina*, *gomphoecephala*, *rostrata*, *microtheca*, *polyanthema*, *Mülleri*, and *rubescens*. Thus as *E. Globulus*, which Mr. Divers has found hardy in Ireland, is not named in the above list, it may be supposed that those named would live there, they being hardier than that species.

The climate of Nice is much colder than that of Beyrouth, still I should think that most, if not all, Eucalyptuses would grow here. I have myself only tried about fifty species, but found most of them very difficult of culture, being very particular as to the quality of the soil. There are certain species, said to be of exceptional beauty, which, like M. Morel, I try year after year unsuccessfully. *E. ficifolia*, which Mr. Divers names, is one of these. Still, I have seen this species in a prosperous state in Pasadena, California, covered with its rosy flowers. I am disposed to think that this has, as have many other Eucalyptuses, an objection to calcareous soils. Of all the species I have tried, only about a dozen are reasonably luxuriant here, though I must admit that the Eucalypti are not plants which interest me specially, and therefore have not all been tried so repeatedly, and under such different conditions, as have some other plants. Let me, though, here observe that I have one, the common *E. Globulus*, which is of a size for its age which may be called unusual even with this quick-growing tree. It is, at 1 mètre above the ground, 1 m. 47 centimètres in circumference, and about 30 to 35 mètres high. It is only nine years old, from seed, and was, when planted, one year old, about 1 mètre high, these plants making but poor growth in pots. Now this tree, which towers high above the Olive-trees, has been planted in an out-of-the-way place, where the very poor soil, consisting of stiff, white, gravelly clay, was not even broken up, but only a hole of about 2 square mètres and a half-mètre depth made, wherein it was planted; but next to it is a water conduit, with a leakage, by which the soil is kept constantly moist, and this explains its enormous development.

In other parts of my grounds trees are found of this common species; thus, a row of them has been planted at the edge of a steep slope, to keep up the carriage-road. Though these trees are in good, deep, and loose red loam, they are now, at the age of twenty-seven years, only as large as the one-year-old seedling has grown to be in eight years, and the explanation undoubtedly is that while this last, though in very poor soil, never lacked moisture, the others grow in a very dry place. But a still greater contrast is made by one tiny tree, as old as the others, but having had, in addition to the drought, to contend with an abundant native vegetation of Oaks, Strawberry-trees, and others, near which it was planted. This last, though twenty-seven years old, would not represent in volume more than

a hundredth part perhaps of the nine-year-old one. I could not afford to give the best places needed for delicate plants to such voracious trees, but I often wonder what would have been the development of the said *E. Globulus*, if eight years ago, instead of being planted in poor, unbroken soil, it had been planted where the ground is dug from 2 to 4 mètres depth, and mixed with one cubic mètre of decomposed manure per square mètre of ground. No doubt it would have grown still more wonderfully, but I suppose nothing else would have prospered for a long distance around it. *A. Robertson-Proschowsky, Parc les Tropiques, Chemin des Grottes, St. Hélène, Nice, A.M., France.*

A HARLEQUIN POPPY.

DURING the summer of 1900 a number of field Poppies (*Papaver Rhœas*) came up spontaneously in a bed of peat which I had constructed in my garden in Chelsea during the previous winter. Of these Poppies a few were white, the rest red. The subject of the present note was peculiar in that it produced flowers of three sorts, viz., red, white, and

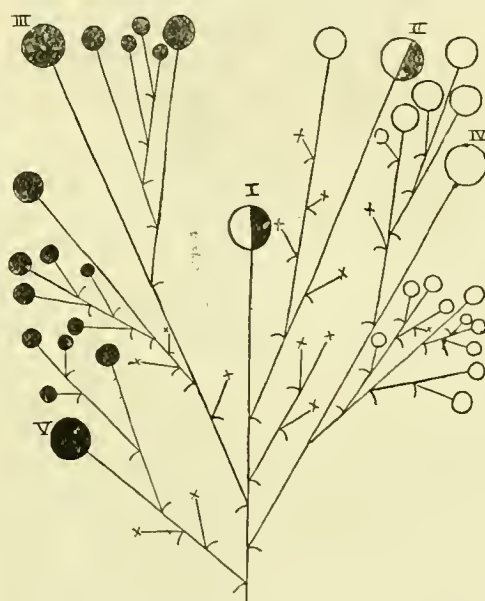


FIG. 71.—PLAN SHOWING THE DISTRIBUTION OF COLOUR IN A HARLEQUIN POPPY.

half-and-half. This plant commenced flowering in the last week of June. The first flower, which terminated the chief axis of the plant, was half white, half scarlet. The transition was quite sudden, as though one half of a white flower had been painted red. One outer petal, and the adjacent halves of the two inner ones were red, the other outer petal with the halves of the inner ones adjacent to it were white. The stigmatic bands and the anthers, which usually differ in colour in red and white-flowered Poppies, behaved in this flower as though it were compounded of half a red flower and half a white.

The second flower, arising at the summit of the topmost lateral, resembled the first. All subsequent flowers were either red or white. Of the four primary branches which produced flowers, the first, which, as I have stated, began with a half-and-half, followed this up with an all-white flower. On this particular branch no further bud opened during the time the plant was under observation. The second lateral produced red flowers only; the third, white flowers only; the fourth, red flowers.

These facts are shown in the illustration (fig. 71), wherein are represented the positions

and colours of all the flowers produced. Those numbered I. to V. are the leading flowers of the main axis and of the principal lateral axes in their order of opening. The flower-stalks which end with a × bore buds, but these were too immature at the close of observation to allow of a certain determination in regard to their colour. The subtending bracts of the flowers are also indicated.

The plant was pulled up on September 3. Seed collected from the three types of capsules was sown in March, 1901, under varying conditions as regards soil and aspect; but the whole crop was uniformly red-flowered. The crop, however, was a poor one, as we suffered a good deal in Chelsea from the inclemency of the season last spring.

The diagram shows the plant in elevation, as though it had been pressed with all its flowers on it. I only regret that I did not also construct at the time a projection of the branches and flowers on a horizontal plane. *F. W. Oliver.*

EXPERIMENTS IN POTATO CULTIVATION, 1901.—The Cheshire County Council, which is doing such excellent work at its Agricultural and Horticultural School at Holmes Chapel, has just issued a report on the Potato experiments carried out there during the year 1901. It has been compiled by the Principal, EDWIN DUCE, Esq., M.R.A.C., F.C.S. In the first series of experiments ninety varieties were tried in small plots, which were manured at the following rate per acre:—16 tons farmyard manure, 3 cwt. 30 per cent. superphosphate, 1 cwt. sulphate of ammonia, 1 cwt. muriate of potash; the artificial manures being sown on the farmyard manure in the drills at the time of planting. In these trials Harrison's Early Short-top stands at the top of the list of early kidneys, Carter's Royalty at the top of the list of early rounds, Duchess of Buccleuch 1st second-early kidney, a seedling first early round, Monstrous (Jarman) 1st late kidney, Charles Fidler 1st late round. These experiments are valuable to the extent of indicating what varieties should be tried in larger quantities the following season. The second class of experiments carried out by the school are most important; the manuring was similar to that indicated above for the small lots. The date of planting was from April 23 to May 9; the drills were 27 inches wide, and the sets were placed from 12 to 14 inches apart, according to the variety. The plots varied in size, but (and this is an important factor) in each case the produce of one-twentieth of an acre was weighed. First among earlies stands Carter's Royalty with 11 tons 5 cwt. per acre to its credit; this variety is described as "Very white, mealy, and of excellent flavour." The best second early is The Factor (Dobbie), with 17 tons 5 cwt. per acre: this is a kidney variety, "strong in haulm, slightly yellow, mealy, and of good flavour;" it was awarded an Award of Merit last season by the Royal Horticultural Society after being grown and cooked at Chiswick. Up-to-Date comes out first among the lates with 13 tons 16 cwt. per acre; this standard variety requires no description, as it is so well known. It is interesting to note that Royalty produced 11 cwt. of small tubers, and 8 cwt. diseased tubers. Doubtless fewer diseased tubers would have been found in this variety had it been lifted earlier than the beginning of September. The Factor produced 10 cwt. small, and 5 cwt. diseased; while Up-to-Date produced 9 cwt. small, and 8 cwt. diseased tubers. Thirty-three varieties in all were tried in this second or large class of experiments. The rest of the report is devoted to recording the effects of different manures on the Potato crop, and of the results obtained by planting seeds of different sizes, making altogether a most valuable little treatise on practical Potato culture.

YOUNG GARDENERS AND SELF IMPROVEMENT.

MANY young gardeners are no doubt desirous of improving themselves in horticultural knowledge, but may be at a loss to know of some systematic way in which to go to work. Efforts are perhaps made, but for want of help or the knowledge of the best way to go about things, they do not result in much. Others again, if they have their attention directed to it, may see the benefit to be derived from a little systematic study; and the purpose of this article is to give some help in that way to such who may find it useful.

The long winter evenings form an excellent time for study, and to prepare for work of observation during the summer time. To gain a good knowledge on horticultural matters, it is very helpful to know something of botany, geography, chemistry, geology, and other things; but before dealing with these subjects, it will be best to take the practical side.

For a real knowledge of gardening there is only one way of obtaining it, that is, by personal experience; and individual enterprise must show itself in the main for the obtaining of the proper sort. Practical knowledge is not to be given on paper, but it is wonderful how this is to be helped by systematic reading, observation, and note-taking; and some suggestions as

to these matters will no doubt prove useful to some of the readers of the *Gardeners' Chronicle*. As to reading, the books dealing with gardening are multitudinous, and to the making of them there is no end; but the following selection is given from the library of a horticultural school, and covers a good range of subjects (see Table below).

Thompson's Gardeners' Assistant is an excellent work, brought up-to-date, dealing with all sides of gardening; is well illustrated, and contains chapters on botany, insect pests, and plant diseases.

A good encyclopædia or dictionary is the best thing for general reference, and besides *Nicholson's Dictionary*, mention might be made of the *American Encyclopædia of Horticulture*, edited by L. H. Bailey; publishers, Messrs. Macmillan & Co.

Garden Flowers and Plants is a capital little book as a primer.

The Horticulturist's Rule Book is full of information and recipes of things likely to be of use to the horticulturist.

Farm and Garden Insects is a compact little book, helpful to recognise the insects of the garden. To be able to distinguish useful and harmful insects and birds, to recognise plant diseases, and to know how to deal with them, is an important part of gardening knowledge. Regular attention should be given to the

various gardening journals, which are a continual source of varied information relative to horticulture. Funds may not allow of investment in more than one among the many gardening journals now published, but that one should be a good one, and the *Gardeners' Chronicle* is not to be bettered.

There is also a very good way in which to obtain a reading of the best literature; that is to form a little circulating library. Where there are several in a garden, or within easy reach of one another, by each taking in a different journal, and after reading passing it on to the others for perusal, the reading of as many different journals as there are members of the circle can be obtained for the cost of one, and the certain journal taken, after going round, comes back to its subscriber. Books could also be passed round in this way, were care taken by the various readers that they did not get damaged. But through the reading of gardening journals there is a very great deal to be learned, and much up-to-date information obtained.

This much, then, for gardening literature; but the great thing is for the individual bent on self-improvement to develop his powers of learning, and to know how to make use of what is learned. The habit of observation is a great thing to be cultivated, and the habit of making systematic records and notes of work, observations, and experiences, and any thoughts which may suggest themselves upon a matter, is wonderfully helpful.

For this purpose there is nothing like keeping a diary, and making entries every evening of the day's work, and of anything of interest learned during that day.

A ruled book of about 250 pages, size about 7 by 9 inches, is very useful for the purpose. The pages should all be numbered, and a $\frac{1}{2}$ -inch margin line drawn from top to bottom at the left-hand side of each. Entries should be made regularly, and a temporary index kept. This is to be easily done by taking sufficient sheets of foolscap paper, dividing each page into two columns by a central line drawn from top to bottom, and then heading each column with a letter of the alphabet; these should be pinned together and kept at the end of the book. In making the entries the date might be underlined in red ink, and the chief points of them in ink of another colour, like violet; this gives method in the making of entries, and in glancing over back writing at any time, the eye may be arrested by any point that may prove interesting, thus:—

"Sept. 4.—Potted off rooted Erica cuttings made in June from the half-ripened growths. Three or four in a large sixty is better than singly in a thumb; they are not likely to get so dry, while a little disturbance at the roots when they are young, does no harm. Soil, fine peat and silver sand; very firm potting is essential.

Sept. 5.—Potted on Cinerarias; these will stand a shift from 60's to 32's, as they are very quick rooting, if care is given to watering. Soil used, rotted turf-loam, good proportion of well-decayed manure, and sufficient sand to form a spongy compost. Very firm potting is not good, because of the quantity of roots formed, and the room they occupy."

In the temporary index, column E, the word *Ericas*, with the number of the page against it on which this entry is made, will indicate where in the diary some information respecting *Ericas* will be found. The same with *Cineraria* under C, while by underlining the chief points of the entry, they stand out to the eye when glancing over the book at any time. When the book is becoming filled, a number of pages at the end of it should be counted off for the index proper; the number of pages that will be required can be ascertained from the temporary index. Upon these pages, when ruled and lettered, the permanent index can be made, getting the items in alphabetical arrangement, dictionary style.

Not merely notes of work done should be made, but notes of observations, notes of what may have been learned in conversation or in reading, and by this means a book of valuable and suggestive information can be built up, and when that is finished, another can be started.

To help with the practical work, some classification of the plants dealt with is very useful; say, for instance, plants grown under glass. These are, I think, usually roughly divided into groups, as hard-wooded, soft-wooded, herbaceous, bulbous, succulent, Palm, Fern, and Orchid types. For the purposes of study, they may be better classified and scheduled up in the following way:—

Take a full double sheet of ruled foolscap paper, and divide into ten divisions, ruling lines from top to bottom. Label it at the top "Greenhouse plants," and on a line below head the columns in this way. *Horticultural Student*.

[To the above list of reference books for a garden library we should certainly add the *Treasury of Botany*, in 2 vols., Longmans. Ed.]

PUBLICATIONS RECEIVED.—*Agricultural Bulletin of the Straits and Federated Malay States*, edited by H. N. Ridley. January. Contents: Timbers of the Malay Peninsula, Indigo, Instructions for Drying Plants, Gutta-percha from Leaves, Dissemination of Seeds by Natural Means, &c.—*West Indian Bulletin*, Vol. II., No. 4. Contents: Jamaica Fruit Trade, Rice in British Guiana, Sweet Potatoes, &c.

| | Name of Book. | Author, &c. | Publishers. | |
|-----|--|----------------------------------|---|--------------|
| 1. | Thompson's Gardeners' Assistant. New edition. 6 vols. | Edited by W. Watson. | Gresham Publishing Company. | 8s. per vol. |
| 2. | Dictionary of Gardening and Encyclopædia of Horticulture. 8 vols. | Edited by G. Nicholson. | Upcott Gill... | ... |
| 3. | Choice Stove and Greenhouse Plants. 2 vols. ... | B. S. Williams ... | The Author, Paradise Nurseries, London, N. | 5s. per vol. |
| 4. | Greenhouse and Stove Plants... .. | Thomas Baines ... | John Murray ... | ... |
| 5. | Amateur Orchid Cultivator's Guide Book ... | H. A. Burberry ... | Blake & Mackenzie ... | 3s. |
| 6. | Sander's Orchid Guide | ... | F. Sander & Co., St. Albans. | ... |
| 7. | Cultivated Roses | Edited by T. W. Sanders. | W. H. & L. Collingridge. | ... |
| 8. | Book of the Rose | Rev. A. Foster-Melliar. | Macmillan & Co.... | ... |
| 9. | Tuberous Begonia: Its History and Cultivation ... | ... | Gardening World Office. | ... |
| 10. | The Dahlia: Its History and Cultivation... .. | Edited by Wm. Cuthbertson. | Macmillan & Co.; and Dobbie & Co., Rothsay. | ... |
| 11. | Popular Bulb Culture: A Handy Guide to the Successful Culture of Bulbous Plants, both in the Open and Under Glass. | W. D. Drury ... | L. Upcott Gill ... | ... |
| 12. | Tomato Culture | B. C. Ravenscroft. | Upcott Gill... .. | 1s. |
| 13. | Garden Flowers and Plants: A Primer | J. Wright | Macmillan & Co ... | 1s. |
| 14. | Hardy Flowers | W. Robinson ... | The Garden Office. | ... |
| 15. | Arboriculture for Amateurs: Being Instructions for the Planting of Trees for Ornament and Use, &c. | Wm. H. Ablett ... | Bazaar, Exchange & Mart Office. | 2s. 6d. |
| 16. | Our Gardens... .. | S. Reynolds Hole. | J. M. Dent & Co. ... | ... |
| 17. | Culture of Vegetables and Flowers from Seeds and Roots. | Sutton & Sons ... | Simpkin, Marshall, Hamilton, Kent & Co. | ... |
| 18. | Profitable Gardening: A Practical Guide to the Culture of Vegetables and Fruits. | Shirley Hibberd. | W. H. & L. Collingridge. | ... |
| 19. | Principles of Fruit Growing | L. H. Bailey ... | Macmillan & Co.... | ... |
| 20. | Scientific and Profitable Culture of Fruit Trees ... | From the French of M. Du Breuil. | Crosby Lockwood & Son. | 3s. 6d. |
| 21. | Practical Fruit Culture | J. Cheal, F.R.H.S. | George Bell & Sons | 2s. 6d. |
| 22. | Fruit Culture under Glass | David Thomson ... | Wm. Blackwood & Sons. | ... |
| 23. | Art of Grafting and Budding | Charles Baltet ... | Crosby Lockwood & Son. | 2s. 6d. |
| 24. | The Tree-Pruner: A Practical Manual on the Pruning of Fruit Trees. | Samuel Wood ... | Crosby Lockwood & Son. | 1s. 6d. |
| 25. | The Strawberry Manual... .. | Laxton Bros. ... | Hulatt & Richardson, Bedford. | 1s. |
| 26. | The Nursery Book | L. H. Bailey ... | Macmillan & Co.... | ... |
| 27. | The Forcing Book | L. H. Bailey ... | Macmillan & Co.... | ... |
| 28. | Horticulturists' Rule Book | L. H. Bailey ... | Macmillan & Co.... | ... |
| 29. | Calendar of Sowings and Plantings in the Flower and Vegetable Garden. | E. Kemp Toogood. | Toogood & Sons, Southampton. | 6d. |
| 30. | Special Manures for Garden Crops | A. B. Griffiths ... | W. H. & L. Collingridge. | 2s. |
| 31. | Chemistry of the Garden: A Primer for Amateurs and Young Gardeners. | H. H. Cousins ... | Macmillan & Co.... | 1s. |
| 32. | Horticultural Buildings | F. A. Fawkes ... | Swann, Sonnenschein & Co | ... |
| 33. | Farm and Garden Insects | Wm. Somerville ... | Macmillan & Co.... | 1s. |
| 34. | Manual of Injurious Insects and Methods of Prevention and Remedy. | Eleanor A. Ormerod. | Simpkin, Marshall, Hamilton, Kent & Co. | ... |
| 35. | Our Garden Friends and Foes | J. G. Wood... .. | George Routledge & Sons. | 3s. 6d. |
| 36. | Our Country's Birds and How to Know Them ... | W. J. Gordon ... | Simpkin, Marshall & Co. | ... |
| 37. | Text-Book of Plant Diseases caused by Cryptogamic Parasites. | George Massee ... | Duckworth & Co.. | ... |

COLONIAL NOTES.

MUSA CAVENDISHI.

This interesting dwarf Banana (figured in *Paxton's Magazine*, iii., 51) is well known in English hothouses, where it frequently ripens large bunches of delicious fruit. According to Baker, it was brought from Southern China to Mauritius, and after being cultivated there was afterwards introduced to England in 1827. I referred to this Banana in a letter to the *Times* of September 3, reprinted in the *Gardeners' Chronicle* of September 7, and quoted Seemann's interesting statement (*Flora Vitiensis*, p. 289) that plants from the Chatsworth

were such realistic artists that he felt sure such a dwarf Banana existed in China before it was known to Europeans. Since Sir Joseph's death, I have been informed that the ship in which the plants that were given to Mr. John Williams was wrecked on its arrival at Fiji, but when all hope of the recovery of the plants had been abandoned, they were found to have arrived, and taken root on the sea-shore. I have lived in Chatsworth Park forty years, but have not found anyone who could verify this statement (which I heard in Italy). If you can throw any light on the story I shall be obliged if you will favour me with a line on the subject."

D. Morris, Imp. Depart. of Agriculture for the West Indies, Barbados, January 18.

The accompanying photograph (fig. 72), says Mrs. Ernald Smith, may be of some interest to your readers. It represents four Banana-trees bearing fruit at the Oaks

In the volume for 1850, p. 452, the story of the introduction of this valuable plant from Chatsworth to the Samoan islands by the missionary Williams is detailed. ED.]

THE OKROE (*HIBISCUS ESCULENTUS*).

We cultivate this plant largely in Grenada as a food-producing plant—in fact, it grows partly wild. The portion eaten, as everybody knows, is the young seed-pod, shortly after the corolla drops off. It is, when cooked, of a slimy nature, but withal palatable, when once a taste is acquired for it—like so many hot-country productions. Roasted salt fish, a pepper (*Capsicum*), cooked Plantains, and Okroes, up in the mountains, after a bath in the running stream, and the appetite as a con-



FIG. 72.—MUSA CAVENDISHI, IN THE GARDENS AT THE OAKS, EMSWORTH, HANTS.

Gardens, taken to the Polynesian Islands by John Williams, the Martyr of Eromanga, led to its extensive cultivation, and contributed to put an end to the famine that previously had devastated some of those islands. I have just received a letter, quoted below, from Mr. E. M. Wrench, of Baslow, Derbyshire, who mentions from hearsay what is current in the neighbourhood of Chatsworth as to the introduction and distribution of the Chinese Banana. In the absence of works of reference, I am unable to look into the subject at present, and can only hope that the publication of Mr. Wrench's letter may lead to the actual facts being placed on record. Mr. Wrench writes:—

"Dear Sir,—I have been interested by your letter to the *Times* of September 2, and particularly to your allusion to the introduction of the *Musa Cavendishi* or *chinensis* into Polynesia. I have heard Sir Joseph Paxton say how he sent a botanist to China to find the dwarf Banana, in consequence of his discovery of a drawing of the plant on a red Chinese wall-paper—exposed when a room at Chatsworth was being repapered. Sir Joseph Paxton argued that the Chinese

Gardens, belonging to Mr. Ernald Smith, Emsworth, Hants. All were last year's suckers; the one which is ripe first was a sucker in February, 1901. It showed fruit in August, and in six months (that is January 21) we were cutting splendid fruit; it had 165 fruits. No. 2 was a sucker in April, 1901; it showed fruit on October 5, and we expect to cut in April. No. 3 was a sucker on April 27, 1901; it showed fruit on November 16, 1901. No. 4 was a sucker on June 23, 1901; it showed fruit Nov. 28, 1901. On an average three of the fruit weigh 1 lb. Mr. Hughes, the gardener, is to be congratulated on his success.

[The history of the introduction of this Banana from Mauritius to the Cape of Good Hope, and then to the Calcutta Botanic Garden by Gibson, is given in the *Gardeners' Chronicle*, 1841, p. 100. It fruited at Calcutta in 1836, and Gibson remarks it ought not to require more than twelve or thirteen months for the maturation of the fruit.

sequence "placed on edge," is a tasty and satisfying dish.

In the island of Carriacou, attached to Grenada, the natives dry, slice, and string the Okroe, hang it in the sun, and use it in their culinary requirements at will, which certainly is a useful and foreseeing custom, for in the dry season such a thing as a fresh Okroe is hardly to be seen. W. E. Broadway, Grenada.

THE NAVEL ORANGE.

Re Orange within Orange, Gard. Chron. of February 1, p. 83, this peculiarity is, I think, from description just an extreme form of "Navel Orange," vide my report of last year. The "Navel" Orange "Embigo" of Portuguese, &c., is named from the fact that a second small abortive fruit is produced just under the rind of the Orange proper, the "eye" of which is very open, and the second Orange more or less protrudes, having somewhat the appearance of the human navel. There is a good plate in

Californian Fruits, Wickson; the picture, however, is intended to show the beauty of the fruit of the "Washington Navel Orange," rather than the abnormal secondary fruit. The State of California publishes a report with several plates, sections of the "Navel" fruits. I forget title of book just now. The "Navel" Orange is in great repute in California, and the same may be said of South Africa, where the variety was introduced from Bahia some twenty years before it reached the Washington Botanical Gardens, from thence was distributed to Riverside, California; hence the name "Washington" Navel. These remarks, chiefly for your own information, will throw some little light on the importance of the variety; also account for the stress put on it in my report for 1900. The plates in Californian report, if I rightly remember, show the extreme form of a small Orange quite imbedded in the larger fruit.

Your correspondent, H. de Varigny, inquires as to seedless varieties of Orange. The Malta, St. Michael's Paperrind, Excelsior, Jaffa, may be named as seedless, and the Navel varieties nearly so; no doubt there are other seedless kinds besides these named. E. Tidmarsh, Grahamstown, S. Africa.

MARKET GARDENING.

RAISING TOMATO-PLANTS FOR PLANTING OUT-OF-DOORS.

THE present is the best time for making the first sowing of Tomato-seed for raising plants to fruit in the open. If many thousands of plants are required, it will be advisable to make three sowings at intervals of five or six days between each sowing, thus affording time to get the plants, resulting from the first sowing, pricked out in boxes or potted off singly into 3-inch pots, before those raised from the second sowing are ready for treating in the same manner, the plants resulting from the third sowing being treated in the same way in due time. Thus sown, all the plants can be conveniently dealt with in the way indicated above, before they become "drawn up," as would probably be the case were the plants all raised from seed sown at one time. Sow the seed thinly in shallow boxes, having a little fibry-loam, half-decayed leaves, or half-rotten stable dung, placed in the bottom, and then filled to within 1 inch of the top with light soil, made fairly firm with a piece of board before and after the seed has been sown, and covered lightly with fine soil. Place the boxes in a position near the roof glass, water through a fine rose, and then cover the boxes with a few sheets of newspaper, so as to prevent the soil drying too quickly by the action of the sun; the covering of paper will preserve the soil in a more uniformly moist condition than would otherwise be the case. The paper should, as a matter of course, be removed as soon as the seedling plants appear through the soil. As soon as the little plants have made about 2 inches of growth, they should be pricked out in boxes (prepared as recommended for the reception of the seed) in rows between 3 and 4 inches apart, and at the same distance from plant to plant in the rows, making the soil moderately firm about the individual plants in dibbling them in. Place the boxes in a pit or house near to the glass, water to settle the soil about the plants, keep close and shade from sunshine for a few days, by which time the roots of the plants will have taken to the soil, and the shading can be dispensed with altogether; the admission of fresh air should be gradually

increased, in order to promote and maintain a sturdy growth in the plants up to the time they are transplanted in the field in rows, between 2 and 3 feet asunder, and at 1 foot from plant to plant in rows.

STOPPING AND TRAINING CUCUMBER-PLANTS.

Cucumber-plants raised from seed sown the first week in December last, are now fruiting pretty freely from the first and second lateral growths trained to the first and second wire of the trellis, and pinched beyond the second joint, the sub-laterals being stopped at one joint, the same treatment being applied to the lateral and sub-lateral growths, as they push forth close to the several wires, the main stem having been pinched at intervals of 2 feet beyond the first wire of trellis. The fruit should be cut as soon as it attains to the proper size. All "crooks" being cut the same time, and sent to market in flats marked "crooks," at the same time as sending the duly formed and developed fruits. In packing, put a good lining of hay in the flats, and next to this a lining of paper on the bottom, sides, and ends of the flats, as well as a layer of paper between and over the top lot of fruit, a covering of hay being put over all in sufficient thickness to admit the lids of the individual baskets being shut down pretty closely on the contents, thereby preventing the fruit from shifting in any way in transit. Put a surface-dressing of short manure, from which all rank heat has escaped in the process of turning over, on the ridges; this will not only preserve the moisture in the soil about the roots, but it will also contribute to the swelling the fruit by the substance of same being washed down to the roots each time water is applied thereat. Keep the plants uniformly moist at the roots; aim at a night temperature of 70°, and run it up to 90° or 95° with sun-heat, before admitting fresh air to the house, plenty of water being distributed in the house at same time. A high atmospheric temperature, well charged with moisture, being an indispensable condition in the production of Cucumbers in quantity and fine quality. H. W. Ward, Mar. 15.

The Week's Work.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Apricots.—Except in the south, it is yet early to disbud; here the operation must soon be commenced, as well as the thinning of the fruit where too many have set. The young growths should be thinned by degrees, a beginning being made with those at the top of the tree. As the Apricot fruits on spurs, as well as on one-year-old, well-ripened shoots, only those shoots that are at a right angle to the wall face, are ill-placed, or are crowded together, should be removed, the best situated shoots being retained to be laid in or pinched back later on.

Plums.—Trees on south or west walls unfold their blossoms early this month, and should be afforded protection against frost at night, such as double fish-netting, which is also a protection against hail. The covering should be removed in mild weather.

General Remarks.—The month of March has been favourable for carrying out all kinds of work, and there should be no arrears to fetch up. Late-planted trees should receive a good mulch of strawy litter, and be made secure by nailing, tying, or staking, as the case may require. The Fig and Vine may still be planted in warm, well-drained positions, the soil used for each being free from rank manure,

but a good proportion of mortar-rubble should be incorporated with it, the whole made firm, and water afforded. Grafting fruit and other trees must be rapidly pushed on with now that the sap is rising. The clay that is put on the grafts should be examined, and if found to be cracked, smooth it over with a thick slip of clay and water; or having rubbed the clay with wetted hands, fasten pieces of canvas, carpet, or some green moss around the clay.

THE FLOWER GARDEN.

By R. DAVIDSON, Gardener to EARL CADOGAN, Culford Hall, Bury St. Edmunds.

Flowering Deciduous Shrubs.—Plants of *Lonicera fragrantissima* and *L. Standishi* have for the most part ceased flowering—a suitable period for pruning them. In doing this, the shoots that have flowered should be cut back nearly to their base, the stronger ones to about three buds, and the weaker to one bud, and thus make space for the young wood which will flower next year, which should be trained in the desired form as it grows. Always aim at getting the shoots to grow as far as is practicable with about equal vigour, and if any are more vigorous than others, stop them at the fourth leaf, and encourage two laterals to grow from that point. Medium-sized, short-jointed, well-ripened wood always flowers well. During the growing season, apply some suitable fertiliser once a fortnight, at the rate of about 3 ozs. per square yard of surface, washing it into the soil over the roots of the plants, and if it be of a light sandy nature, afford a thin layer of half-decayed tree-leaves or rotten manure. The pruning of *Hydrangea paniculata grandiflora* consists of cutting back last year's shoots to two eyes, and it being the rule for the flower panicles to appear on the young wood at about the seventh or eighth pair of leaves, whenever sufficient flower-heads are found on a plant, all superfluous weak growths should be removed, in order to prevent overcrowding. Half-standards similarly treated need support from strong, neat stakes, and if any of these are decayed, replace them with new ones, tying the stems of the plants thereto with tarred string; then apply a thick mulch of rotten manure. *H. Hortensia* and its varieties require some light kind of protection against frost, otherwise the flower-buds get damaged. This species should be pruned after flowering, and the plant looks well when placed several together in the shrubbery borders. Young plants are easily raised from cuttings of half-ripened wood struck in the summer in a cold pit, and young plants possess flowers and foliage of a much finer size than is the case with aged plants; moreover, they are more easily managed in every way. The present affords a suitable season for planting the *Hydrangea* out-of-doors. The stations should be heavily dressed with manure, the soil trenched, and the plants copiously afforded water when planted.

FRUITS UNDER GLASS.

By JAMES WHYTECK, Gardener to the DUKE OF BUCKLEUCH, Dalkeith.

Figs.—The fruits in the earliest house being well advanced, see that the trees do not suffer from dryness at the root; and if the trees are fruiting freely, and the wood is not too strong, apply weak manure-water frequently. If red-spider be present on the leaves, afford copious syringings, and maintain considerable humidity in the house. In dull weather do not make so much use of the syringe as in sunny weather. Let the night temperature be 60°, and by day 10° or 15° higher. As the fruit approaches ripeness, stop the syringing, but do not keep a too dry atmosphere, for the second crop of Figs is coming on.

Peach-house.—The trees in the earliest house being now in active growth, no more shoots should be retained than are necessary for furnishing next year's crop; and in the case of young trees for extension, any shoots having fruit only at the base should be shortened back to three leaves, and those

that are unduly strong and likely to rob the others should be entirely removed, and the weaker shoots thereby strengthened. Let over-crowding of shoots be carefully avoided, and lay in shoots towards the centre, so as to have that part well furnished. When stoning is finished, which will be known by the fruits increasing in size, the temperature may be raised, according to the state of the weather, to 65° on cold nights, and 70° on mild ones, not exceeding these figures unless ripe fruit is desired at a very early date. Syringe the trees twice daily, so as to keep the foliage clean, ceasing when the fruits begin to ripen, affording then a dry, warm atmosphere, and ventilating freely by day, and a little air at night more or less, in accordance with the outside temperature.

Succession - houses.—Attend to the first thinning of the fruit, the disbudding and pinching of the shoots, and apply quassia-water if aphids appear; and if the leaves curl, distribute tobacco-powder over them. To old trees apply manure-water at the root, but not any to vigorous growing ones till the last swelling of the green fruit takes place.

Melon-houses.—In order to secure Melons in succession till a late date in the autumn, sow seed now, and at intervals of two or three weeks; sowing in 60's to the number of two or three in each, in coarse, rather dry loam, and plunge them in bottom-heat of 75° to 80°, and close to the glass then, and at every future stage of growth. No water should be applied, unless the soil becomes unduly dry. These plants may be grown in garden frames set on hot-beds made of stable-litter and last year's tree-leaves. When the violent heat has passed away, make a hillock of fresh loamy soil, mixed with fine lime-rubbish, in the middle of each light; place two plants on each, and cover the whole surface of the bed slightly with soil. When the roots show plentifully on the surface, add soil gradually till the bed is of an uniform depth. Afford a small amount of ventilation constantly at the top of the frame for two or three weeks, or as long as much vapour is given off. The fruits on plants raised in January will now be swelling, and some fresh soil mixed with artificial manure may be added to the beds, with a 1-inch layer of horse-droppings over all. Afford water pretty copiously at this stage, but not within a space of 6 inches round the stems. When the Melon-house is closed about 2.30 to 3 P.M., the temperature may not exceed 90°, nor during the night or hours of darkness 70°. The heat of the bed should be steady at 85°. Damp the paths and walls, and generally keep the house moist.

THE ORCHID HOUSES.

By W. P. BOUND, Gardener to J. COLMAN, Esq., Gatton Park, Reigate.

Odontoglossum bictonense.—Should any plant require potting this season, the operation should be attended to forthwith, the compost used being that advised in a previous Calendar for *Odontoglossum crispum*. This variety succeeds to a better degree in an intermediate than in a cool-house at all seasons, but even then an intermediate-house is not the best place, unless fresh air is constantly admitted. During the growing season the plant will take a fair amount of water at the root, and be benefited by being syringed overhead on bright days.

Phaius.—Plants of *P. grandifolius* now passing out of flower should be kept rather dry at the roots till the new growth appears; and should repotting then be found necessary, this should be performed when the new growth is 3 inches high. As a compost use good turfy-loam one-half, turfy-peat and leaf-mould one-quarter each, mixing these well together with some soft red brick, or crocks broken small. The drainage should be good, as it is essential that a clear passage for water be given, the plant requiring much water when growing. The soil should be made firm, and the base of the plant kept below the rim of the pot. *Phaius Blumei*, and its varieties *P. bicolor*,

P. Humboldti, *P. Wallichii*, may be similarly treated; *P. Norman*, *P. Marthæ*, *P. amabilis*, and *P. Cooksoni*, hybrids of *P. tuberculosus* and others, are beautiful varieties which do not require anything more in the potting soil than small pieces of soft brick about the size of a walnut mixed in it, and to be afforded more water when they are growing. My experience of these hybrids when grown in leaf-mould is, that they endure for only a short period of time, but the sight of the fine, healthy plants exhibited on March 11 at the Drill Hall by Messrs. F. Sauder & Sons, which were growing in leaf-mould, made me think that we have hitherto neglected one of the best composts Nature provides us with, and cultivators of Orchids should make themselves conversant with the new methods and alter their practice accordingly. The *Phaius* being plants requiring much moisture, a shady position should be found for them in the warm Orchid-house, and where the syringe can be frequently applied between the pots and overhead in sunny summer weather.

PLANTS UNDER GLASS.

By J. C. TALLACK, Gardener to E. MILLER MUNDY, Esq., Shipley Hall, Derby.

Bouvardias.—Those who favour the raising of stock from new growths taken off with a heel, should now be enabled to get these in plenty from early rested plants; and strike them readily if the plants have not been fed with artificial manures. Light and sandy soil is best for filling the cutting pots; and the cuttings must be shaded till they strike. Personally, I prefer root cuttings, raising them in the same manner as the *Dracæna* from eyes, putting them thickly into pans filled with sandy soil. Young plants raised in this manner grow very freely. If some of the old plants are going to be retained, they should, when they break after pruning, be shaken out of the soil, the root-mass reduced, and re-potted in a mixture of leaf-mould, fibrous-loam, and a small quantity of decayed animal manure, together with a considerable quantity of sand. The plants should be placed in a house where they will be afforded a fair amount of heat and moisture.

Primulas.—Among the many species of cool-house *Primulas*, *P. floribunda* and *P. verticillata* should not be overlooked. The former may be flowered at any season, but I prefer to raise the plant from seeds now ripening on winter-flowered plants, new seeds always germinating with but little trouble. When large enough, prick them out into pots or pans, potting them later, singly in 60's, and removing all flower-trusses till the end of the month of September. With this sort of treatment it is possible to flower them throughout the winter season, that is, at a time when they are most appreciated. *P. verticillata* is a lovely, sweet-scented species, flowering in the months of April and May. The new season's seeds are not yet ripe, but it will be possible to raise a fair percentage of plants from the seeds of last year. The above must not be raised in strong heat, or their germination will be delayed.

Cinerarias.—Those plants that are now coming into flower should be afforded clear manure-water twice a week; or, alternately with water, that made from sheep's-dung, or obtained from the ox or cow-stalls, being preferred.

Cyclamens.—Plants going out of flower should, if intended for keeping over another year, have all old flower-stems pulled out clean from the base before being put into a cool, shady frame to rest for a while, during which time the water supply should be greatly reduced. But I do not advise the retention of once flowered plants, for though good specimens are now and then seen, and used to be common, the results gained by present-day methods of raising and growing-on quickly are more generally satisfactory, and one knows beforehand that there will be no blind plants.

Eschpnanthus.—Where these are grown, the stock should now be renewed by taking cut-

tings of the young growths and inserting them in sandy peat, in small pots that may be plunged in a propagating-frame. Insert them three in a pot, and pot them on bodily for transfer into flowering-baskets. Old plants may be turned out and replaced in fresh soil, if they are healthy. For some weeks after doing this no water need be afforded except through the syringe.

THE KITCHEN GARDEN.

By T. TURTON, Gr. to J. K. D. WINGFIELD DIGBY, Esq., Sherborne Castle, Dorset.

Celery.—Heads of Celery still in the trenches may now be taken up and heeled-in on a north border for temporary kitchen use. The ground being cleared, the ridges may be levelled, and the ground sown with Peas in succession, or with Beet-root and Carrot seeds. The early-sown Celery should be pricked off into boxes at 3 ins. apart, the boxes placed on a mild hot-bed, and removed thence to a cold pit or frame on renewal of growth. This is a better method than to prick out in hot-bed frames and allow the roots of the plants to strike down into the hot-bed materials, and in consequence suffer a check when transplanted to the trenches.

Kales, Broccolis, &c.—Sow on an open piece of rather poor ground, and better plants will be obtained than if the ground were rich, as in the latter the plants grow too big before they can be planted out. Sow the seeds thinly in drills drawn 1 foot apart, and there will be no necessity to prick out the plants into nurse-beds. Cottagers' Kale is a serviceable variety, and should be planted extensively. A good type of Scotch Kale, such as Sutton's Al and Asparagus-Kale, should also be grown pretty largely. Sow a good quantity of seed of Purple Sprouting Broccoli, and less of other varieties, as where space permits the planting on different aspects in the garden and its adjuncts of this important crop is advisable, the plants being raised in as hardy a manner as possible. Another sowing of Broccolis should be made about the end of the present month, or in May, for planting after Strawberries or early Potatoes are cleared off. Sow Green Curled and other varieties of Savoy, which require a long season to mature.

Herbs.—New beds should be planted in alternate years, and the spring is the best season for planting. Common Thyme and Sage, green or purple-leaved, should be raised from slips put under handlights in the autumn, which will at this date be in a fit state to plant. The plants may stand at 1 foot apart. Mint and Tarragon should be raised from cuttings taken from roots that have been forced, raising them in hot-bed frames. Pot off divisions of Marjoram and Lemon-Thyme pulled from old plants. Seeds of Knotted Marjoram, Sweet Basil, Summer Savory, and Chervil should be sown directly the weather and state of the ground are favourable for so doing. As the last three go to seed quickly, it may be necessary to make several sowings. The old herb-beds should not be destroyed until the newly-planted ones have become established.

Kitchen Garden Walks.—The fine weather experienced for some time past having been favourable for the pushing forward of all kinds of work, advantage should be taken of the next two or three weeks to entirely replant or make good the gaps in the Box-edgings, or to straighten and mend any sort of edging existing in the kitchen garden; also to turn or wheel away dirty gravel, previous to spreading fresh. April, all things considered, is one of the best months of the year for such kinds of work, and no effort should be spared to make the kitchen garden as inviting to the employer, in respect of well-cared-for walks and edgings, as in other matters. At this season weed-killer can be used most effectually, the gravel not being dry, hence not so much of the liquid is necessary to reach the roots of the weeds. Since the introduction of weed-killer, and the scarcity and dearthness of labour, lox as an edging for garden walks has gone out of favour.

EDITORIAL NOTICES.

ADVERTISEMENTs should be sent to the PUBLISHER

Illustrations.—The Editor will thankfully receive and 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.

| | | |
|------------|--------|---|
| SUNDAY, | APR. 6 | Chambre Syndicale d'Hort. Belges, Ghent, Meeting. |
| TUESDAY, | APR. 8 | Royal Horticultural Society's Committee meet. Brighton and Sussex Horticultural Society's Exhibition (two days). |
| WEDNESDAY, | APR. 9 | Shropshire Horticultural Society's Spring Show. |

SALES FOR THE WEEK.

| | |
|---------------------------|---|
| MONDAY, APRIL 7— | Roses, Ferns, Bulbs, &c., by Protheroe and Morris, at 12. |
| TUESDAY, APRIL 8, ALSO 9— | Nursery Stock, &c., Parker and Parker, Leamington. |
| WEDNESDAY, APRIL 9— | Roses, Palms, Sweet Bays, Carnations, Violets, Azaleas, &c., at Steves' Rooms.—Palms, Azaleas, Perennials, &c., by Protheroe & Morris at 12.—Sale of Orchids, by Cowan, Leeds, 12.30. |
| FRIDAY, APRIL 11— | Border Plants, &c., by Protheroe and Morris, at 12.—The Stoke Hill collection of Orchids by order of the Rev. Paynter, by Protheroe and 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 —47.2.

ACTUAL TEMPERATURES:—

LONDON.—April 2 (6 P.M.): Max. 51°; Min. 40°.

April 3.—Fine.

PROVINCES.—April 2 (6 P.M.): Max. 45°, W. Ireland; Min. 42°, Shetlands.

MR. GEORGE
FERGUSON
WILSON.

THE news of the death of Mr. GEORGE FERGUSON WILSON, or as he was generally called, "GEORGE WILSON," will be received with universal regret by his fellow horticulturists.

He died on Good Friday at Weybridge in the eightieth year of his age. To most people he was known as an enthusiastic gardener, but in his early life he was not only a man of business, as manager of Price's Patent Candle Company, but a man of science of such note that he was elected a Fellow of the Royal Society. To him we owe the production of pure glycerine, and of various papers relating to the chemistry of fatty substances. Mr. WILSON, in fact, was one who clearly perceived the all importance of scientific method and of scientific research in the improvement of manufacturing processes. Now-a-days, thanks to German competition, manufacturers are beginning to recognise the importance of science, but WILSON was fifty years in advance, and the excellence of his products, and the results that accrued from them, sufficiently attest the correctness of his judgment.

"Science once introduced," says WILSON, "has raised candle-making from a simple, clumsy, offensive, mechanical trade into a first-class chemical manufacture, one offering the widest field for applications of the highest chemistry. . . . All, I think, tell the same story—the immense importance of bringing the greatest possible amount of science to bear on industry."

The story of this part of WILSON's life, and of the circumstances that led up to it, is given in *The Old Days of Price's Candle Company*, from which the above citation is made. This is a most interesting and significant book, written by Mr. WILSON for the instruction of his sons.

Living originally at Wandsworth, he soon acquired a "cottage" at Weybridge, to which he retired when business permitted him, and where he made his first great horticultural success with his Orchard-house. Herbaceous plants and Lilies were also thus early subjects of his attention. This little cottage, known as Gishurst Cottage, was placed at the disposal of his friends from time to time, and great was the pleasure he was enabled to confer on his friends by this hospitality. Some surprise was raised by his friends at the name "Gis-hurst" (meaning pig-wood), but WILSON stated that the word would soon be widely known. This indeed proved to be the case, as the valuable insecticide known as "Gishurst Compound" was shortly introduced, and is now universally used by gardeners. The Gishurst Compound supplied another illustration of the application to practical purposes of chemical knowledge which was so marked a characteristic of Mr. WILSON.

After a time a substantial residence was built on Weybridge Heath, and gardening pursuits were pursued on a larger scale. "Laboratory training teaches careful observation and close watching," both useful in gardening. This was made manifest in WILSON's gardening career. It was not long before he became the possessor of some acres of land at Wisley, a few miles from Weybridge. A clearance was made in a wood. There was little if any plan, but the plants were placed in the situations most suitable for them. The ground was extensive enough to allow of experiment being made, and the result was that plants seem to be growing there as if they were natives to the soil.

Mr. WILSON for many years took great interest in the affairs of the Royal Horticultural Society, and served on its Committees. For a time he was Chairman of the Fruit Committee. He was on the Council when the Society was at a very low ebb. At this time he strenuously advocated the guinea subscription, which was not looked on with much favour at the time, but the adoption of which in these later times has been one of the chief factors in the prosperity the Society now enjoys.

THE JAPANESE GARDEN, GUNNERSBURY HOUSE, ACTON (Supplementary Illustration).

—The garden at this pretty suburban residence of the Messrs. ROTHSCHILD, contains several singular and remarkable features; and probably the one which would strike the visitor most is the Japanese garden. This garden has not been formed longer than two years, and it is at the present time very well furnished with vegetation, and seems as if it might have existed for twenty years. The ground plan consists of banks and islands with flat tops and steep banks, and separated by little stretches of water, everything in miniature; and in that respect a counterpart of many of the gardens of the wealthy in China and Japan, as we know them by descriptions and drawings. There are the slender Bamboo bridges, the stone altar or lantern, never absent from a Japanese garden; the flat stepping stones laid irregularly, but evenly, over wet places, here, with common Musk growing in the interstices between them; Water-Lilies of various species, Chinese Palms and Bamboos, and surrounding the whole, a neatly constructed fence of Bamboo-rods put together without nails. The country has

been ransacked by Mr. HUDSON, the gardener, for plants of Chinese or Japanese origin, wherewith to give suitable realistic effects; plants which are not native to Japan or China being rigidly excluded. The more prominent plants are Bamboos and Palms, and these seem to have been planted so extensively with the idea, probably, of affording immediate effect, that the danger of smothering out more weakly plants seems imminent. We remarked growing in the water *Zizania aquatica* (Rice), *Rodgersia podophylla*, *Hydrangeas* of species, Japanese *Convolvulus*, *Lilium longiflorum*, *Myriophyllum proserpinacoides*, and that great favourite of the Japanese gardeners, *Rhodea japonica*, and the variegated form of it; the double and single-flowered forms of *Sagittaria*, *Cyperus antiquorum*, *Hedychium coronarium*, *Funkia undulata*, *F. media*, *F. subcordata*, and others. On the balustrade of the bridge, the long trailing growths of *Wistaria sinensis* are being trained in a natural manner. A good plant of *Aralia japonica variegata* made a conspicuous patch of white foliage (see fig. 73, p. 231). Other *Aralias* noticed were *pulehra*, *Sieboldi* and *S. variegata*; plants of *Sciadopytis verticillata*, *Illicium religiosum*, and *Quercus Daimio*, the Japanese Oak, are flourishing. Altogether, the Japanese garden affords gratifying effects, and it is a complete change from the ordinary style of garden, although flowers are subordinated to foliage, and are relatively few.

ROYAL HORTICULTURAL SOCIETY. — The next Fruit and Flower Show of the Royal Horticultural Society will be held on Tuesday, April 8, in the Drill Hall, Buckingham Gate, Westminster, 1 to 5 P.M. A lecture on "The Construction of Pergolas, and on Plants for them, and for Verandahs," will be given by Miss GERTRUDE JEKYLL, V.M.H.

PROFESSOR MACOWAN, D.Sc., B.A., F.L.S. — "No man better deserves the honour," were the opening words used by Professor HAHN at the Good Hope Hall on Cape University Degree Day, the 14th of last month, as he proceeded to state the reasons why Professor PETER MACOWAN, B.A., F.L.S., the colonial botanist, should be invested with the honorary degree of Doctor of Science. Professor MACOWAN was appointed principal of the Shaw College, Graham's Town, in 1862. From 1869 to 1881 he was professor of chemistry at the Gill College, Somerset East, and in 1881 he was appointed director of the Cape Town Botanic Gardens, and professor of botany at the South African College. Since 1892 Professor MACOWAN has held the position of Government Botanist. Professor MACOWAN has carried on the study of South African botany with enthusiastic zeal and great success, and his scientific work in systematic and applied botany is held in the highest esteem in South Africa as well as in Europe.

NATIONAL ROSE SOCIETY.—We are informed by Mr. EDWD. MAWLEY, hon. secretary, that there will be no meeting of the committee during the present month.

CORONATION GIFT.—The dreary monotony of life in the blockhouses will be enlivened and relieved by the kindly thought and generous consideration of Messrs. SUTTON & SONS, the well-known seedsmen of Reading, who are sending as a Coronation Gift a presentation box of both vegetable and flower seeds to each of the long line of blockhouses erected by our patient hard-working soldiers in South Africa, in all 55,000 packages. Messrs. SUTTON & SONS were fortunate enough to secure the active sympathy of Colonel Sir HOWARD VINCENT, M.P., who has been greatly interested in the

schem, and through him they conveyed their offer to the War Office. Lord ROBERTS, the Commander-in-Chief, and Mr. BRODRICK, the Secretary of State for War, have sanctioned the proposal, and have written gratefully accepting the present on behalf of Lord KITCHENER and the Army in South Africa.

COLONIAL FRUIT: SEASON 1902.—The Orient Company's steamship *Omrah*, due in London on April 26, will bring 28,000 cases of Apples from Hobart; and the *Oceana*, due on May 4, will bring 20,000 cases.

BUREAU OF PLANT INDUSTRY.—This is a section of the U.S. Department of Agriculture, organised in July, 1901, and devoted to the investigation of vegetable physiology and pathology, botanical investigations and experiments, the study of grass and forage plants, of pomology, of seed and plant introduction, and other matters relating to horticulture and agriculture. Some idea of what our American kinsfolk are doing may be obtained by stating that the bureau consists of a chief, Prof. GALLOWAY, and no fewer than twenty-five assistants, comprising pathologists, botanists, physiologists, a "cerealists," a Tobacco expert, a mycologist, and a chemist.

THE HYBRIDISATION OF CISTUS.—Self-fecundation is impossible with many species of *Cistus*, although the pollen and the ovules are perfect, and fertilise the flowers of other individuals which allow themselves to be fertilised by them. The pollen of *Cistus monspeliensis* fecundates most of the white-flowered species of *Cistus*, while it is with difficulty fertilised by them; of 200 fecundations attempted on this species, one plant only did well. Other species manifest the same differences in their aptitude to fecundate, or to be fecundated. In crossings where the rôle of the parents is interchanged, the productions are often quite similar; sometimes they are not similar. *C. ladaniferus* crossed by *C. hirsutus* forms an erect shrub, *C. hirsutus* crossed by *C. ladaniferus* forms a low plant like the mother.*

STERILISATION OF THE SOIL.—American Carnation-growers prevent many of the ills to which Carnations are subject, by forcing steam at a pressure of 30 to 40 lbs. through the soil placed on benches for a couple of hours. This kills eel-worms, fungus-spores, red-spider, weed-seeds, &c. For the manner in which it is done, see the *American Florist*, February 22, p. 116.

THE SMITHSONIAN REPORT.—We have before us the annual report of the Board of Regents of the Smithsonian Institution, Washington, showing the operations, expenditures, and condition of the Institution for the year ending June 30, 1900. The report of the Superintendent of the National Zoological Park is illustrated by photographs by Messrs. Dugmore & Keller of the bear, moose, mule, deer, antelope, and beaver, that add greatly to the attractions of the book. The general appendix contains articles on Progress in Astronomy during the Nineteenth Century, by Sir Norman Lockyer; the Solar Eclipse of May 28, 1900, by S. P. Langley; Notes on Mars, by Sir Robert Ball; Solar Changes of Temperature, by Sir Norman Lockyer and W. J. Lockyer; the Pekin Observatory; Progress of Aëronautics, by M. Janssen; Lord Rayleigh on Flight; the Langley Aërodrome; the Zeppelin Air-ship, by Thomas Curtis; Kites in Meteorological Observations, by A. L. Rotch; Che-

mistry in the Nineteenth Century, by Prof. Ramsay; Liquid Hydrogen, by Prof. Dewar; A Century of Geology, Prof. J. Le Conte; Evolutional Geology, by Prof. W. Sollas; Progress in Physics, by Prof. Mendenhall; Electricity during the Nineteenth Century, by Prof. Elihu Thomson; Photography of Sound Waves, by R. W. Wood; Unsuspected Radiations, by Prince Kropotkin; Incandescent Mantles, by Vivian Lewes; Physico-Technical Institution in Charlottenburg, by Henry Carhart; Geographic Conquests of the Nineteenth Century, by Gilbert Grosvenor; From Cape to Cairo, by Ewart Grogan; Yermak Ice-breaker, by Admiral Makaroff; Biology in the Nineteenth Century, by Oscar Hertwig; Restoration of Extinct Animals, by F. A. Lucas; Life in the Ocean, by Karl Brandt; and Nature Pictures, by A. R. Dugmore. This latter article is delightfully illustrated with photographs taken from live birds and other creatures, that are as superior to the average pictures of them as the living creatures to stuffed specimens. Character-study of a beaver is equally interesting. Advance in Colour Photography; Breeding of the Arctic Fox, by Henry de Varigny; Discoveries in Mesopotamia, by Dr. F. Delitsch; Ancient Steelyards, by H. Gökeland; China and the United States, by His Excellency Wu Ting-fang; Chinese Folklore and Western Analogies, by F. W. Williams; Loot of the Summer Palace at Peking, by Count d'Hérissou; Medicine in the Nineteenth Century, by Dr. J. S. Billings; Malaria, by Dr. G. M. Sternberg; Psychical Research of the Century, by Andrew Lang; The New Spectrum, by S. P. Langley; The Century's Great Men of Science, by J. S. Peirce; Life of Huxley, by W. K. Brooks; Reminiscences of Huxley, by John Fiske; are the remaining papers in an interesting volume. Where necessary, diagrams and plates illustrate the letterpress.

FRUIT AND FLOWER CULTURE IN THE UNITED STATES.—The following figures respecting fruit-tree cultivation in the State of Maine we abstracted from the Census Returns now being issued at Washington, U.S. The "difference" (+ or -) column is the result of comparison with the figures of the Census of 1891; the produce returns are similarly treated:—

| Fruits. | Number of Trees. | | Produce—Bushels. | |
|----------------------|------------------|------------|------------------|------------|
| | 1900. | + or - | 1899. | + or - |
| Apples ... | 4,184,781 | +1,181,672 | 1,421,773 | -1,649,698 |
| Apricots ... | 81 | -102 | ... | -3 |
| Cherries ... | 11,597 | +911 | 1,550 | +686 |
| Peaches ... | 9,592 | +7,985 | 1,895 | +1,678 |
| Pears ... | 39,502 | +5,571 | 11,200 | -1,911 |
| Plums and Prunes ... | 29,001 | +14,607 | 2,282 | +991 |

The value of orchard products in 1899 was 833,634 dolls. The small fruit area is now 1,036 acres, distributed among 4,577 farms. The value of the fruits grown was 157,699 dolls., an average of 3,445 dolls. per farm. Of the average, 49.4 per cent. was devoted to Strawberries, the produce reaching 1,066,860 quarts. The other fruits were:—Blackberries and Dewberries, 151 acres—164,300 quarts; Cranberries, 90 acres—1,551 bushels; Currants, 32 acres—37,080 quarts; Gooseberries, 30 acres—41,230 quarts; Raspberries and Loganberries, 131 acres—214,700 quarts; others, 90 acres—102,040 quarts. Coming to the culture of flowers, the proprietors of 65 of the 93 establishments whose flowers are grown for the market, make commercial floriculture their principal business. In 1899 they raised

flowers and plants valued at 134,232 dolls. In these there are 653,861 square feet of glass-surface, equivalent to 490,396 square feet of land under glass. Some 131 farms have 693,714 square feet of land under glass; making a total for the State of 1,184,110 square feet.

INSECT-FEEDING BIRDS.—Mr. EDWARD LOVETT, of 41, Outram Rd., Croydon, sends us a plea for protecting insect-feeding birds. He says: "For many years I have encouraged the nesting of titmice, robins, and hedge-sparrows in my garden, with the result that my fruit-trees are always clean and free from maggots, &c. During winter, I feed these birds with suet scraps or other fat suspended from the branches of trees or placed in some other cat-proof position. This food is always put near suitable nesting boxes, also cat-proof. Last year I had six nests in my garden; the house-sparrow enjoys much misplaced consideration. The London County Council has, as an experiment, given instructions for my suggestion to be adopted in their Parks and Gardens." Appended to the circular are diagrams of protected nest-boxes with measurements.

BIG HEADS AND LITTLE HEADS.—A correspondent calls our attention to an article in a recent issue, anent the proceedings of the "Royal Society," and says that no "brain" students of any importance has ever asserted that "large heads are more intelligent than small heads," nor are such views shared by phrenologists. What he does say is this: large heads are more powerful than small ones, more full of force, more able to manage, than small ones, and less manageable; but the degree of intelligence depends upon the quality, &c., and not the size. So far, Professor K. PEARSON is correct; it is just as easy to judge of brain quality, intelligence, or "ability," as it is for a merchant to judge of the quality of any marketable produce, if studied in the light of the founders of brain science, Drs. GALL and SPURZHEIM.

"THE JOURNAL OF THE DEPARTMENT OF AGRICULTURE OF VICTORIA."—We note the appearance of this as a new publication, the first part being issued in January. The editor is Mr. H. W. POTTS. The *Journal* is to be of help in giving advice to agriculturists and cultivators generally, to report upon the work of the Department, and to be a means of extending the inter-State and foreign markets. The contents are contributed by competent authorities, and are of the nature of those found most valuable in similar publications. A coloured plate of *Vitis monticola* accompanies this first part.

THUJA OCCIDENTALIS (ARBOR VITÆ) AND SMALLPOX.—A medical doctor writing in the *Daily Express* recommends this plant as a homeopathic cure for smallpox, and declares that it has cured some of the worst cases of the confluent type. As a preventive, the writer says: "Anyone taking a dose a day need not fear smallpox; and those who have bad arms, or suffer from the effects of vaccination, will find in *Thuja* a wonderful remedy." A medical doctor should know that there is no "cure" for smallpox.

PLANT PORTRAITS.

ASPARAGUS DUCHESNEI.—A new species, from the Congo, even more decorative than *A. Sprengeri*.—*Revue de l'Horticulture Belge*, March.

BORONIA TETRANDBA.—Greenhouse shrub, leaves pinuate, pinne linear; flowers stalked, axillary, pluk. Rutaceae. *Revue de l'Horticulture Belge*, March 1.

BRODIAEA CAPITATA. Bentham. — *Mechans' Monthly*, March. For monograph of the species of this genus see *Gardeners' Chronicle*, August 29, 1896.

DICENTRA EXIMIA.—*Amateur Gardening*, March 1.

* Ed. Bornet, *Notice sur les Travaux Scientifiques*, Paris, 1896. *Bull. Soc. Bot. France*, xlv. (1899), p. cxcii.

DISAS, HYBRID VARIETIES (D. Langleyensis × D. Veitchi ×).—*Gartenflora*, March 1.

HUNNEMANNIA FUMARIIFOLIA.—An herbaceous perennial allied to *Eschscholtzia*. *Revue Horticole*, Mar. 1.

MAGNOLIA WATSONI.—*Le Moniteur d'Horticulture*, February 16.

MIMULUS RINGENS, Linnaeus.—*Mechans' Monthly*, February. Flowers pale lilac. N.E. America.

PRUNUS FRUTICOSA, Pallas = P. CHAMÆCERASUS, Jacquin.—Shrubby; leaves lanceolate, tapering at the base to a short stalk; peduncles 2 inches long, slender; fruit subglobose, the size of a large pea; purplish-red. *Revue Horticole*, February 16.

ROSE SOUVENIR DE PIERRE NOTTING, T.—Flowers creamy-yellow, petals recurved, inner flushed, with bronze on outer surface. A cross between *Maréchal Niel* and *Madame Cochet*. *Rosen Zeitung*, January.

SCHIZANTHUS WISETONENSIS ×.—*Le Moniteur d'Horticulture*, March 10.

BANK HOLIDAY AT KEW.

THE many visitors to the Royal Gardens, Kew, in the glorious sunshine of Monday last, could hardly fail to admire the Daffodils and other spring flowers that, like the visitors themselves, responded to the influence of the summer-like conditions of the atmosphere. The grassy "mound" that stands between the T-range and the Palm-house was ablaze with the golden-yellow of the Daffodils, which though not at their best were sufficiently showy to call forth very hearty appreciation. In the pleasure-grounds there was little else in flower excepting the Almonds, therefore the bulbs in the grass, in beds, and upon the rockery, had few rivals.

At the Easter Bank Holiday no visitor to Kew fails to inspect the contents of the glasshouses, and to spend the greater part of his time in doing this, leaving his wanderings in the pleasure-grounds and wild-garden for Whitsuntide or August. The temperate-house is less sombre-looking than usual just now, for the great *Rhododendron* bushes, including those that came from Tremough, are nearly in full bloom; and most of the *Acacias* are covered with yellow blossoms, a very distinct one being *A. longifolia*. The *Agave* species referred to in our number for January 25, p. 61, is still there with its great flower-spikes, but the flowers have passed. The species has been determined a new one, and the name *A. Bakeri* has been given it. In one of the smaller divisions of the temperate-house the quantity of blossom upon the *Orange-trees* made the air almost oppressive with their perfume. The *Palm-house* plants look very well, but, as usual, there is not much floral show there. The more observant of the visitors, however, may have seen the great trusses of handsome flowers high above their heads upon the *Brownias*, several species being now in bloom.

The *Orchid-houses* were nearly filled with bloom, the show of *Dendrobiums* and *Epidendrums* being excellent. The new *Phaius tuberosus*, introduced by Mr. Warpur, the handsome *Moorea irrorata*, and many other species and varieties, contributed to the beautiful display.

In the stove may be seen in flower, tied to a rafter, a very old *Acanthaceous* plant, *Asystasia scandens*, with cream-coloured flowers having five lobes to the corolla limb, and brown, almost black anthers. The species is evergreen, grows about 5 to 7 feet high, and needs all the heat and moisture of a stove atmosphere. In the *Begonia-house* a number of species and varieties are making a glorious show of flower. *Jatropha podagrica* in bloom in the *Heath-house* is worth notice for its exceeding brilliancy of colour: the flowers are orange-red of the very brightest tint; the five-lobed leaves are just commencing to develop from the apex of the gouty stem.

In the greenhouse, or No. 4, there is an abundance of bloom upon such plants as *Hippeastrums*, *Rhododendrons*, *Eriostemons*, *Acacias*, spring-

flowering bulbs, &c. Most noticeable in this house are four large pot plants of *Acacia pulchella*, nearly 5 feet high, and as much through. They are literally "smothered" with pretty yellow, almost orange-yellow, flowers, and anyone seeing them must ever after remember this species.

AMARYLLIS AT WESTONBIRT.

THE famous collection of *Hippeastrums* in Captain Holford's gardens near Tetbury, which has been continuously improved upon for the last fifty years, has never before made such a grand show as at the present time. The large span-roofed house specially arranged for their cultivation is filled with gorgeous flowers from end to end, about 2,000 spikes of magnificent flowers in all stages being expanded. The flowers of this strain possess characteristics in which a descent from the fine old species which it was the delight of Captain Holford's father to collect can be distinguished. The collection was famed for the advances made upon *Amaryllis Ackermanni pulcherrima*, and *A. marginata venusta*, as they were then called in gardens; the former imparting the deep scarlet tint to its progeny, and the latter the delightful shade of scarlet and white stripe, and a delicate fragrance to those derived from it. The same features greatly improved may still be traced in the *Westonbirt Hippeastrums* of the present time. In the early days of the collection, important improvements were wrought by selecting seedlings of some forms of *A. vittata* and *A. Gravinae*, or *Graveana* as it was called; and with regard to one of the first breaks from the last-named, which the late "Squire" Holford considered perfection, it is related that its flowers first opened on the wedding-day of our present King and Queen, and the Squire, as he was generally called by his people, immediately named it *Princess Alexandra*, and bore it off to the mansion to take the place of honour at the dinner-table. It was a grand flower, and similar ones in the collection to-day still hold their own. The raising of *Hippeastrums* at *Westonbirt* is systematically carried out, well defined types being followed up, with the result that the collection boasts of great variety, and does not merge into one large class, and thus create monotony. The two extremes are the pure white without any colour at all, and the dark velvety crimson-scarlet with a scarcely perceptible green base, from which springs an intensely dark reddish-maroon flush to the middle of each segment. Of these the pure white is the least grateful subject to increase or improve, although already a very fine form has been secured. The dark shades of scarlet and the crimsons are more prolific, but as each marked improvement sets the standard of excellence higher, the work in this as in other classes is not light. Breadth and equality in width of petal and expansion are the principal points aimed at. Even in the best strains the lower middle segment is defective in regard to size, but in some of them it is now equal to the other segments. To evolve new sections is another object, and in this direction the charming variety known as *Apple Blossom* takes the lead. Its flowers are fine in form, white with a tinge of red on the margins, and a profusion of minute red spots evenly distributed over the surface of the flower, suggesting descent from the always rare, and now probably extinct, *Hippeastrum pardinum* *Dombrianae*, or "salmon-spotted," as it was called.

Looking over the dense mass of magnificent flowers, it is difficult to select; but beyond

those mentioned, Mrs. Albert Grey, a fine scarlet and white; *Autoerat*, scarlet with white star; *Cardinal Richelieu*, large cherry-red; *Lord Dalhousie*, scarlet with white star; *Monarch*, crimson; James O'Brien, dark blood-red; and *Wildfire*, rich scarlet, showed up prominently. There were, too, among the new and yet unnamed bulbs some finer flowers.

Strange crosses are also attempted, and now about to flower is one of special interest, between the *Hippeastrum* and *Clivia miniata*. At least, Mr. Chapman, the head gardener, can answer for the cross being made with exceptional care, so as to obviate any risk of disappointment; and although there is at present little to indicate a change from *Hippeastrum*, there seem to be traces of difference in the form and veining of the leaves, and the flowers, when expanded, may disclose others.

In a cold greenhouse were noticed a number of fine large bulbs sending up flower-spikes. In the matter of cultivation, Mr. Chapman stated that he does not repot all of the bulbs annually, although when the time for overhauling them arrives a large proportion are repotted. In the New Year the house is prepared, and the materials of which the plunging-bed consists is got in readiness for the plants. In February the bulbs are taken from their cool, dry, resting quarters, and those to be repotted are shaken out of the soil, and repotted in a compost consisting chiefly of good turfy-loam two-thirds, leaf-soil, old stable-manure, and $\frac{1}{2}$ -inch bones one-third. The plants not repotted are top-dressed, and all that are intended for the chief display plunged in a bed having a gentle bottom-heat, and carefully and sparingly afforded water till the flower-spike leaves appear, at which time water is more freely applied. But in the matter of affording water, some sections differ from others; the descendants of the almost evergreen *Hippeastrum aulicum platypetalum*, which was one of the stock-breeders years ago, suffering from the severe drying-off that is found suitable for the race which partakes more of the deciduous character of *H. vittatum*. The introduction of fresh blood into the old stock has chiefly been effected by the use of *Hippeastrum pardinum*, *H. Empress of India*, and one or two others of Messrs. Veitch's strain.

On glancing at the display presented at *Westonbirt*, it is difficult to imagine any other class of plants which could make such a gorgeous display, some faint idea of which may be gained by those who saw the Gold Medal group shown by Captain Holford at the Royal Horticultural Society, or our illustration in the *Gardeners' Chronicle*, May 13, 1899, p. 299.

ST. ANN'S, DUBLIN.

LORD ARDILAUN'S residence is situated near the sea, in the direction of the Hill of Howth, four miles from the centre of Dublin, and at a considerable elevation. The park is large, and is agreeably planted with deciduous and evergreen trees, to which large additions have been made recently. In sheltered parts of the estate, Conifers are making good progress, and promise to become fine trees. The old kitchen-garden is largely planted with hardy and half-hardy herbaceous perennials and flowering shrubs, and was remarkably gay with flowers in August last, when I was there. Mr. Campbell, his lordship's head gardener, is much interested in raising new varieties of hardy flowers, and had a bed of very beautiful Carnations, that he had raised from seed at various times, some of which have passed into the hands of the trade; he has also crossed

with success, the more difficult subjects—*Anemone japonica* and *Lobelia fulgens*. A pergola has been constructed over one of the main walks, of unbarked Fir-poles of varying lengths, ingeniously joined together, which had a very pretty effect. A good selection of hardy climbers is planted that will eventually cover it; and a border of mixed flowering plants formed along each side of it. Near the mansion I observed large flower-beds cut out in the grass, and divided into sections by capital hedges of common Yew, the dark colour of the foliage increasing the floral effect, and affording protection against the wind. Large masses of *Lobelia fulgens*, including several very fine varieties; *Salvia patens*, *Heliotrope*, and various kinds of *Pelargoniums* in large beds, and of distinct colours, and made a fine display. Some borders of mixed herbaceous—perennial, and annual plants near here were doing well; and a good

make mention of *Lonicera gigantea*, a distinct and desirable species; *Cassia corymbosa* survived the winter on a wall outside, and was covered with flowers; shrubby *Veronicas* in variety are hardy here, and do well. Several rare climbers have lately been planted on a warm wall, and will prove interesting in a few years if they survive. One good feature, which I suppose everybody would like, was a hedge of *Lavender*. W. H. Divers.

THE LUPIN AS A FIELD CROP.

A CORRESPONDENT, "W. G. T.," enquires on p. 152 for the publisher's address of a cheap book on the cultivation of Lupins; and seeing that no one has replied to him in these pages, I think it may be of interest to give him a few references to sources of information on the subject. The question has been asked several times before in agricultural journals, but I

matter is fully treated there, and quotes that in February, 1859, Mr. Thomas Chrisp, of Butley Abbey, brought its merits as a sheep food under notice of the public in a communication to the Council of the Royal Agricultural Society of England. He received the seeds from Baron Nathusius, a large landed proprietor in Prussia, who devoted much time to practical and scientific agriculture. A full report of that gentleman's statements, analysis, &c., are given, and contains information of considerable importance.

"Our Farm Crops," by Wilson, 2 vols., Blackie & Son, Edinburgh, pp. 150 to 153. This well-informed author, in treating the subject, refers also to the important article in the *Royal Agricultural Society's Journal*, vol. 22, p. 106.

The large white Lupin is much appreciated on the Continent, where sheep are fed on the young plants, and the seeds, soaked in water, make good cattle-food. There are three species used, the before-mentioned *Lupinus albus*, the common yellow (*L. luteus*), and the small blue (*L. varius*). The seed in each case is quite distinct, the two latter being much smaller than *L. albus*; the yellow is the hardiest, consequently better adapted for poor soils in colder climates than the South of Europe.

The quantity of seed required for an acre would be about 112 lb. to 168 lb., according to requirements of crop, and generally costs about 20s. per 112 lb. for large quantities.

It is most valuable as a green manure for arid, barren lands, and is destined to become of great service to the farmers at the Cape. J. Murison.

FORTUNE'S DOUBLE YELLOW ROSE.*

MR. THOMAS BLACKMORE, gardener at Springfield, Great Marlow, Bucks, sent us recently the following note with some flowers of this species:—

"I am sending you a small box of Roses (Fortune's Yellow), a variety, I think, not enough known to be appreciated. It is a most prolific bearer, easily grown in a cool greenhouse; ours is grown in a house facing south-east, with just sufficient heat to keep out frost. When once established it soon covers a large space, requires but little pruning, simply cutting out the old wood and laying-in the young. The Rose was planted in a border made of Reigate loam, 2½ feet in depth, five years ago, and it now covers a trellis under the roof of more than 290 square feet; and it makes a grand sight when in full bloom. I have been cutting for the last month, and could cut perhaps on an average about eighteen dozen blooms weekly. Unfortunately, the flowers do not last long, but owing to the freedom with which they are produced, there is a pretty constant supply. My employer, Mr. R. Hay Murray, first saw the plant in Italy, where the flowers are quite yellow, not tinted as they are in this country."

Fortune, when visiting Soo-Chow in June, 1844, saw there in the Chinese gardens a fine new double yellow Rose. Subsequently he found the same climbing double yellow Rose in the garden of a mandarin at Ning-Po. It was said that it was from the more northern districts of the empire.

Lindley, in *Journ. Hort. Soc.* vi. (1851), 52, mentions Fortune's double yellow Rose, then cultivated in the garden of the Society. It was brought home by Fortune on his return from China in 1846 (l. c., i. 223). Fortune

* *History of European Botanical Discoveries in China*, Bretschneider, p. 457.



FIG. 73.—*ARALIA JAPONICA VARIEGATA*, IN THE JAPANESE GARDEN, GUNNERSBURY HOUSE.
(SEE P. 228.)

specimen of the golden-leaved *Cortaderia* (Pampas-grass) was a telling feature. Yew-hedges are found in various parts of the gardens, the best I have ever met with. From the front of the house, looking towards the sea, a novel effect is produced by training some large Lime-trees in the form of three adjoining arches; the view of the sea as seen from this point is very charming. But the water view is not confined to the sea—a lake in the grounds has been well treated by planting fine foliage plants and trees on the banks, showing up well from various points of vantage. In the vicinity of the lake a fine spring of water known as St. Ann's Well, exists, and from which the place takes its name. Palms and plants with fine foliage are grown in a lofty conservatory, and many subjects not often met with in gardens were observed in the houses, all of which bore evidence of good cultivation. It was not the time for Orchids in flower, but a collection growing in various suitable houses had a healthy look. Of plants in flower I must

have not seen any direct answers to it. Considering that there are only two works referred to by Mr. B. Daydon Jackson in the *Vegetable Technology*, it may be conceded that a special work on the subject is very scarce, if such a book really exists.

Under "Lupine," the editor referred to mentions:—

"Analysis and Use of Lupine Seed as Fodder," by H. Settegast, *Chemical Society's Journal*, 1872, pp. 642, 643.

"Monografia dei prati artificiale Coltivati ed erba medica, trifoglio, lupinella et Sulla," by G. A. Ottavi, ed. 3, Casale, 1879, 8vo. (Sulla is *Hedysarum coronarium*; French Honeysuckle of our gardens, and Sainfoin d'Espagne of the French.)

Messieurs Vilmorin et Cie., Paris, publish an important work, "Les Plantes de grande Culture," at 3 francs, where full information on sowing and cultivating is given, when used for feeding purposes, green manure, &c.

"Purdon's Practical Farmer," *Farmers' Gazette Office*, Dublin, pp. 276 to 278. The

speaks highly of its beauty in China, but in England it has little claim to notice [?]. Flowers as large as those of the common China Rose, semi-double, solitary, dull buff, tinged with purple.

Lindley notices the same plant again in *Paxton Flower Gard.* iii. (1852), 156, and names it *Rosa Fortuniana*. It was first sent by Fortune in 1845, to the Horticultural Society (*Journ. Hort. Soc.* i., 218). Some years later he introduced it for Standish & Noble, with whom it flowered. Fortune furnished the following memorandum:—

"I discovered it in the garden of a mandarin at Ning-Po, where it completely covered an old wall, and was then in full bloom. Masses of beautiful yellowish and salmon-coloured flowers hung down in the greatest profusion. The Chinese call it 'whang jang ve (huang ts'iang wei)' or yellow Rose. The flowers vary a good deal in colour. It is quite distinct from any other known variety, and admirably adapted for covering walls."

Comp. also *Bot. Mag.*, tab. 4679 (1852), Fortune's double yellow Rose; *Flore d. Serres*, viii. (1852), tab. 769; *Revue Hort.* (1854), 41, tab. 3; *Regel, Monogr. Ros. in Act. Petrop.* v. (1877), 328, considers Fortune's China yellow Rose to be a variety of *R. sinica*, Murr.

SOUTH AFRICA.

FRUIT GROWING IN THE TRANSVAAL.

THE fruit crop this year is a splendid one, for which we may thank the fine rains which fell in October, when the orchards were in bloom. Our rainfall for the last four months was:—October, 5.43 inches; November, 4.12; December, 4.41; January, 7.64. The Johannesburg market is amply supplied by orchards six miles from town—another proof of the repeated assertion that this town and its suburbs is an oasis in a desert of uncultivated ground. And yet, when the Transvaal was first settled, this part of the high veld was looked down upon by the Boers as worthless. The soil was poor, grass scanty, water scarce, the winter was hard, and there was no shelter for stock, as native trees were wanting. But the soil has been tilled by brains and gold, and as a result, we see to-day vast forests and gardens and orchards yearly extending all round the city of Johannesburg.

Beginning with Cherries early in November, we next have superb Apricots, Peaches, Nectarines, Plums, Grapes, Figs, Apples, Pears, and Quinces. And from Barberton, on the way to Delagoa Bay, come very good Pine-apples, Bananas, Mangos, Oranges, and Guavas. This season Japan Plums have appeared on the market in quantity for the first time, and the more we see of this class of fruit the better they impress us; Satsuma, Kelsey, Boton, Ogon, Burbank, we have fruited them all. The crop of Green-Gage Plums is a very good one this year; so also is Standard of England Plum, Damsons, and Agen, French or Californian Prune. The Peach stock is the best for nearly all Plums in our light soils.

This is pre-eminently the country for the Peach, for it is the only introduced fruit which springs up self-sown, therefore we may assume that it is perfectly at home here. The varieties grown are European, American, and selected seedlings raised locally. Only now we begin to value Early Crawford Peach as a canning variety. The St. Helena, or large yellow Clingstone, is the latest Peach; it is a fine one for jam, and a very good stock for budding Plums and

Apricots on. For size, flavour, appearance, hardiness, vigorous growth, and freedom from maggots in the ripe fruit—that curse of the Cape and Natal—the Peach is a universal favourite. The only insect pest known is green-fly, which attacks the young leaves; but this may be checked by syringing with paraffin and soft-soap much diluted.

The Apricot comes next to the Peach in freedom of growth and regular bearing. Cherries we are only beginning to cultivate; but the deep, dry sandy loam which is our prevailing soil seems to suit Cherries and Spanish Chestnuts exactly. Much trouble has been caused in past years by planting Cherries which were budded on a suckering stock which spread everywhere, but we have learnt better now. Our soil is somewhat too light for Apples and Pears, but in a heavy, black, moist soil, such as is found near spruits and rivers, these two fruits do very well. There are exceptions to every rule; the most experienced man finds every season fresh to him, every walk in the country, every visit to a farm, garden, or nursery raises new questions and suggests fresh ideas; and so this season we have been surprised to find Apples bearing heavily on a poor, moist, white sandy soil, and Quinces fruiting well in a situation we took to be far too dry to mature such a moisture-loving fruit.

Figs love a rather hot, moist aspect to fruit well, but in a cold, dry, windy, exposed spot they fruit very sparingly. Grapes do very well, if suitable varieties are selected for planting. This is not a wine-making country, as the term is understood in France, California, the south-west districts of the Cape, and many parts of Australasia, because our winter is dry and summer wet—just the reverse of the seasons in the above-mentioned countries. But there are some imported European Grapes which thrive very well on a trellis, what is called Chasselas, Sweetwater, green and black and crystal; these are very vague names, but I give them as given to me. The native hybrid American Grapes, as grown in the Eastern States, for eating and wine-making, do admirably on the high veld, and should be grown by everyone who has a back yard or piece of spare ground.

Strawberries require irrigation and a heavy moist soil; we must confess we have been unable to grow a good Strawberry here. Cape Gooseberries (*Physalis edulis*) can strongly be recommended as a paying crop. In frostless parts they are perennial, but hereabouts they must be treated like Tomatos. Melons, neither sweet nor water, like our wet summer, still fair specimens are to be bought which have been locally grown. A dry, hot aspect and sandy soil suit Melons best.

The price of fruit in the shops is still much too high. Two shillings a dozen for Peaches, and sixpence each for Bon Chrétien Pears seems exorbitant. Altogether, the prospects of fruit-growing in the Transvaal are very promising. R. W. Adlam, Curator, Joubert Park, Johannesburg, January 29, 1902.

GERBERA JAMESONI.

In your issue of December 21, 1901, p. 450, reference is made to the Barberton Daisy (Gerbera Jamesoni). It may interest your readers to know that it grows amongst magnetic stones; so powerfully magnetic are these stones, that running one of them along the edge of a table, a needle will as rapidly follow. Mr. Charles Ayres, the nurseryman, of Cape Town, who some years ago sent home so many Richardia Pentlandi, on returning from his excursion after the above plant, was asked by

the magistrate of Barberton to accompany him to the spot where the G. Jamesoni grew, and he collected as many as his means of transport permitted, simply pulling up the plants, and stuffing them into sacks. After several days' journey they were none the worse, and after pulling the plant to pieces, he dispatched most of them to England, along with the collection of bulbous plants, which form an item of his world-wide business.

CAPE PENINSULA.

A few gardeners are always in request here and other parts of South Africa. Ambitious young men frequently drift into other profitable employment. Mr. Chalwin, of the Municipal Gardens, would always be ready to advise; and Mr. Charles Ayres, nurseryman, always takes an interest in new arrivals. He came out to Cape Town to a gardener's situation, and is now a flourishing nurseryman and florist, with a good balance at his bank—an old man of the late John Fleming's, of Cliveden. All men in South Africa do well, if they stick to their business. I have never met with a more prosperous community than the merchants of all grades doing business in Cape Town. The postmaster from Somerset West, who has just called upon me, says this prosperity is not confined to Cape Town; it is the same all over the country. Should the big irrigation scheme be carried out, South Africa will be the paradise of the universe. It is well that it should be understood gardening here is not as it is at home. A man should be ready and willing in a nursery to take a share of the work all round, from the potting-shed to the packing-shed; and in a private place from the spade to the water-hose. Those who feel such work degrading, had better remain at home, where a gardener is somebody, and not go to a place where his knowledge is more wanted than appreciated. Peter Barr, V.M.H.

HOME CORRESPONDENCE.

CUT FLOWERS.—It is a common experience that some flowers will not keep well in water even for one day. Not only does the blossom not last, but the whole thing withers as if the stalk did not reach the water. By the knowledge of a few simple facts much disappointment and vexation of this sort may be avoided. In the first place, all flowers should be put in water as soon as they are cut. If left out of water for some time, the flowers are parting with their moisture, and not only have they to make up lee-way when put in water, but the cut ends get dried and shrivelled, with the result that some of them have a much lessened power of absorption. Where this has happened, a half-inch or so should be cut off the ends of the stalks immediately before putting them in water. This is an excellent thing to do with flowers which have been travelling, and in addition to this it is advisable to immerse them for an hour or two in a pail of water up to their heads—if the water is tepid so much the better. Some flowers, like Poppies, Stephanotis, Convolvulus, and some Campanulas, which have a milky juice, need a little extra care, as the juice sometimes solidifies as it dries at the end of the stalk, and so impedes the rise of water up the stem. For these and similar flowers it is necessary to split the cut ends a little way immediately before putting them in water, when the milky juice is washed out. Lenten Roses, and some perennial Sunflowers and Gaillardias, are often very unsatisfactory in water; but if the stalks are split a good way up, and the whole of the split portion kept in water, they will be found to last as long as anything else, and longer than many things. It is the flowers with woody stems that often present the greatest difficulty—Lilac, Gueldres Rose,

Spiraea, tall pieces of perennial Phlox, &c. In addition to cutting the ends off the stalks immediately before putting them in water, some recommend peeling the bark off for a couple of inches from the end; some, slitting the stems a little way up; some, loosening the bark for an inch or so, but not removing it; and others, cutting the ends off with a long slanting cut. All these are more or less effectual preparations of woody-stemmed flowers for vases, some answering better to one form of treatment, and some to another. This sort of thing has to be learned by experience. Some of the water-loving flowers, too, are difficult to keep alive. Our English Horsetails (*Equisetums*), some of the tall Water-reeds, the Water Plantain, and many others, will only succeed when cut if several inches of the stem be immersed, and little notches made along the stem so immersed; one notch in the upper part of each internodal portion, so as to let the hollow stem be filled with water. Though it is a very bad practice to recommend, there are some of the wild flowers which almost refuse to live in water unless a portion of the root is pulled up with them. This is notably the case with scarlet Poppies, which, if gathered in this way—the whole stem with a piece of the root attached—will live well, and many unopened buds will unfold. As there is no fear of exterminating the flower-lover's gaudy friend and the farmers' enemy—*Papaver Rhœas*, it may safely be quoted as an instance where this practice is successful. Certain others, however, which answer well to this method, I refrain from mentioning, as they are too delicate and modest, and withal, not sufficiently plentiful to justify or excuse such radical destruction. *Alger Petts*.

MELONS AND LONG TRANSIT.—I do not think the transit of Melons per rail some 250 miles can at all affect their flavour, as to cover even such distance, the fruit need not be packed more than eighteen hours. There have been very few Melons sent to the Fruit Committee from Mr. McIndoe, whilst some other growers have sent many new ones. But even of those which have to come short distances, few are found to be good enough, whether in flesh or flavour, to obtain an Award of Merit. No fruits are more uncertain than Melons, and those that have beautiful form and appearance externally, may when tasted prove to be very unpleasant in flavour. It seems impossible to find a certain reason for this unreliability, because not in all cases are thrips or spider prevalent, or fruits cut before ripe, or from other causes of deterioration. Probably the reason why so many new Melons are of such indifferent quality is, that there is far too much of in-and-in breeding. *A. D.*

FRUITING OF SCHUBERTIA GRANDIFLORA.—When employed in the gardens at Ashton Court, near Bristol, a plant of this species grew freely on the back wall of the stove, and flowered and fruited well. It is a useful plant for cutting, though it is not generally known in gardens. At the last York Show, the flowers shown by one of the exhibitors were greatly admired. *A. Shipway*.

LILIUM GIGANTEUM.—My own experience of the behaviour of this Lily, and its successful cultivation in some gardens in the open, in the main agree with that related by "S. W. F.," Kingswear, South Devon (see p. 124 of *Gardeners' Chronicle*). Indeed, the only point of difference applies to the soil in which the plant was grown. Not that a stem of 13 feet in height was ever obtained, or that still more glorious, if not, indeed, unique crop, for this country at least, of fifty flower-spikes, for this must have been an extraordinary, unrivalled picture; still there were enough flower-spikes, varying from 7 feet to 10 feet in height, to show that not only may this Lily be grown in the open, and without that dense shade said to be more or less essential by Mr. Mallett, but to demonstrate that it may be grown under far more ordinary conditions than is usually supposed.

My experience of the plant was not of one growing in a favoured locality, like the Cornish garden referred to, but in a garden barely 6 miles from Charing Cross, and the success attained should encourage residents in the suburbs of London to attempt its cultivation. It was an upland garden at Sydenham, and the time about twenty-five years ago. At this time, trustworthy information concerning this Lily and its requirements was not so readily obtainable as now, but, judging from what I had seen of pot-grown examples, I decided to afford it a heavy soil, namely, that including clay, that had been taken out when making the railway tunnel at Penge. It was a very unsuitable soil for Lilies, but was rendered suitable by the addition of potting-bench refuse soil, and leaf mould from the adjacent wood. The borders, banks, and slopes were formed of this clay, and gardening, so far as choice plants was concerned, was an expensive matter. The border in which the *Lilium giganteum* grew consisted of this kind of clay, in which, however, a plantation of Laurels appeared to be quite at home. A thin shade from Birch trees fell over the western side of the border, but every other part was fully exposed to the sun. The bulbs were planted in pots in the month of May, and when established they were transferred to the border. The bulbs at that time would be three or four years old. Progress was satisfactory beyond expectations, and every bulb flowered, namely, twelve in the first year, a few in the third, and the remainder in the fourth year from planting. The only protection afforded in the winter was a moderate mulch of dry Oak-leaves or Beech, and as the young leaves appeared in the spring, twigs of Laurel or Box were stuck into the ground around in order to ward off frosts. I regard seedlings of three years or four years old large enough to plant, and particularly when planted from pots as fairly established examples. In this manner, another three or four years—better if five years—must elapse before the flowering stage is reached. Vigorous as the plant is, frequent applications of liquid-manure in the growing season are good for it. *E. Jenkins, Hampton Hill*.

IRIS RETICULATA.—I send a bloom of *Iris reticulata* which seems to be the fusion of two flowers. It has twenty-two parts, and the obliterated fall may be clearly traced, caught in the sheath from which, under ordinary circumstances, the second flower would have emerged. It may possibly be of interest in connection with the case of a flower of *Iris persica*, mentioned on p. 96 of the current volume of the *Gardeners' Chronicle* (February 8, 1902). The flower there noticed had twenty-four parts, and this fact is said to be against the supposition that it originated in the union of two flowers, and "twenty or some smaller number" to be usual in cases of fusion. *M. J. W., March, Cambridgeshire*. [A section across the ovary clearly showed the union of two flowers. *Ed.*]

IRIS RETICULATA MAJOR.—After reading the note by your correspondent, Mr. J. C. Tallack, I can corroborate his remarks as to the fact of *I. reticulata* major being earlier than the type. We had the two varieties on a narrow south border, and in our case *I. reticulata* major was at least a fortnight earlier than the type, and justified its name of *I. r. major*. *R. M., Newbury, March 25, 1902*.

ASPARAGUS SPRENGERI.—Your correspondent Mr. H. T. Martin has at various times called attention to many useful decorative plants. His note in the *Gardeners' Chronicle* for March 8, p. 165, is not the least important of these reminders. Mr. Martin says that liberal treatment is required to ensure growths 4 to 5 feet in length. I am not penning this note with the object of pulling his remarks to pieces, but to assure anyone who will give *Asparagus Sprengeri* a basket, say 2 feet in diameter and 18 inches in depth in which to grow, the basket being suspended in a stove temperature, that it is, at all events with me,

quite an easy matter to secure growths 10 to 12 feet in length, and these are very useful where decoration is carried out on a large scale. The basket system, I think, is much the best way of growing this highly ornamental plant, especially in tall structures, where its beauty is seen to great advantage. It flowers profusely here, and fruits also, and I know of few plants that are sweeter when in flower; a single well-flowered plant will scent a very large house. Another most useful variety is *Asparagus deflexus*, whose light, filmy growths are particularly effective on a white cloth, and also for festooning candelabra, &c. The growth of this with me is much lighter than I have seen it elsewhere. *B. Ashton, Lathom Gardens, Ormskirk*.

ANEMONE CERNUA.—For several years I have regularly imported this plant from Japan, put the roots in the ground, and seen no more of them. Very possibly it is one of those roots which Mr. Jenkins tells us can only be saved by a little preliminary nursing in cocoanut-fibre. Anyhow, last autumn I elected to pot them, and to keep them under glass through the winter. The first bloom has just come out, and is very attractive. It is a nodding bell, woolly on the outside, and of a rich claret colour on the inside. If the plant proves hardy, it will be very desirable; it can be bought quite cheaply in Japan. I note that Mr. Arnott's experience with *Eranthis hymalis* and *E. cilicicus* is the reverse of mine. This is a good thing, for it means that gardens which are unsuitable for the one may be just the thing for the other. For test purposes, I grow them both in open beds; and whereas *E. hymalis* mostly puts up barren shoots, every shoot of *E. cilicicus* bears a flower. I give no protection; the soil is very stiff, and the plant increases at a great rate. *A. K. Bulley, Neston, Cheshire*.

RANUNCULUS LYALLI.—I am glad to report that whereas I have never done any good with seed of this glorious plant imported from New Zealand, seed which ripened here last summer on my own plants, and which was sown at once, is now germinating excellently in a cold frame. Sown under heat, it failed. *A. K. Bulley, Neston, Cheshire*.

WINTER-FLOWERING CARNATIONS.—The correspondence in the *Gardeners' Chronicle* upon the above subject has been very interesting to me. I quite agree with Mr. Jennings on p. 108, February 15: "The Carnation has yet to be introduced that will compare with Mrs. Leopold de Rothschild." The opinion of your correspondent, A. Hemsley, however, does not seem to coincide with that of Mr. Jennings or myself. Mr. Hemsley says (on p. 163, March 8), "The spring-struck plants do not have sufficient time for these side-shoots to flower until the following spring." If that is the experience of A. Hemsley, it is very different to mine. Plants struck in January and treated as Mr. Jennings advises, giving a final stopping about the first week in August, flower uninterruptedly here from the end of September until the following May, and I only use for the final potting 6-inch pots. I was told last November by a very eminent authority, a lady, that she had seen thousands of plants, but none to approach mine. I do not say this in any spirit of egotism, but just to show A. Hemsley that spring-struck plants can be flowered satisfactorily the following winter. Between Mrs. Leopold de Rothschild and the improved form of Miss Joliffe there is, in my humble opinion, a great difference, the latter losing much by comparison with the former. Countess of Warwick is fine as a winter-flowering crimson, and Winter Cheer is the best scarlet I have yet found. Mrs. Lawson is a great favourite here, but what a long time the flowers need to develop! *B. Ashton, Lathom Gardens, Ormskirk*.

A SOMERSET GARDEN.—The winter has been trying, but the promise of fruit-blossom is great. Bulbs are very fine, owing to the good ripening they had last summer. *Romneya*

Coulteri has stood the winter well, and is shooting up freely. *Oncocylus Irises* are a feature here, and many good *Daffodils* are promising well; *Cernuus* is just opening, *Madame de Graaf* has been very fine. I find *Emperor*, *Empress*, *Shirley Hibberd*, and *Princes* do best in pots. *Hyacinths* are poor. *From a Somersetshire Garden.*

THE HALL.—I am truly glad that the horticultural hall is decided on. In the flourishing state of the Society there is no risk, and the plan is far better than the bad and extravagant plan of buying a place in the country which no one would ever visit. *Berlin.* [We have letters to the same effect from different parts of the country, as well as from abroad. Ed.]

CULTURE OF HARDY FRUITS.—Your correspondent, A. W. Godwin, Derbyshire, is conservative in his views in the selection of varieties, especially Apples and Pears, as of the former he only gives sixteen varieties, kitchen and dessert included, and says this limited number embrace "every" Apple necessary to be grown. Surely this is a sweeping assertion to make, even if your correspondent only alludes to the North of England. Among these are one or two kinds that I have always understood to be much more reliable on warm soils and in warm positions, notably *Warner's King* and *King of Pippins*. The latter variety your correspondent describes as unequalled as a dessert fruit. I am afraid the majority of cultivators hold quite a contrary opinion as to its merits in this respect. Varieties of far better flavour, which should be quite hardy in the North, will be found in *Kerry Pippin*, *Court of Wick*, *Claygate Pearmain*, *Mannington* and *Wyken Pippins*, *Scarlet Nonpareil*, and *Duke of Devonshire*; and I should say the *Ribston* and *Cox's Orange Pippins* and *American Mother* could be included, if a situation can be given having a good depth of loamy soil, with a subsoil of sand or gravel, as your correspondent advocates. All these are reliable bearers. And as regards Pears, one can scarcely call *Duchesse d'Angoulême* a good dessert variety, and *Beurré Rance* is more often suitable for the kitchen than for the table, and this even against a wall. *Chaumontel* is very uncertain; *Louise Bonne* of *Jersey* is classed as a late Pear, but no doubt this is a clerical error, as its season is October and early November. *Glout Moreau* and *Easter Beurré* are decidedly late Pears, and should have been classed as such; and one would have thought that very excellent *Pear Josephine de Malines* would have succeeded in Derbyshire, as it is a very hardy late kind, and of good flavour generally. Did space permit, I could extend the list very considerably of both Apples and Pears that thrive and ripen their fruits in the open, and extend the supply in the case of Apples; and we down South should not care to be limited to sixteen varieties of Apples and fourteen of Pears for our supply throughout the season. *J. Mayne, East Devon.*

TOMATOS AND CABBAGES UNDER GLASS.

WHEN, just recently, for the first time since their erection, I looked over the huge range of span-roofed glasshouses Mr. Alfred Smith put up several years' since, at Feltham, Middlesex, I found the entire block of twenty houses to be occupied solely with spring Cabbages, and Tomatos in pots. The block comprises twenty houses, each 600 feet long and 33 feet, or exactly 2 rods wide; the divisions are merely brick piers to carry the roofs. As each pair of houses covers nearly an acre of ground, the block covers nearly 10 acres; such a block of glasshouses devoted to the culture exclusively of Cabbages and Tomatos, shows something of the nature of market-garden enterprise. Ten of the houses have been heated with four rows of 4-inch piping; in these are the Tomato-

plants. In the other ten houses, Cabbages only are growing on the soil floor, just as if in an open field. The Tomato-plants, with the exception of one house, yet are in 10-inch pots, and barely from 2 to 3 feet in height; they are generally a good selection from *Comet*. The plants stand in rows of twenty across each of the two houses, at 3 feet apart, hence there are in each 200 of these rows, or a total of 4,000 plants, whilst in the whole block of nine houses there are no fewer than 30,000; that is a number that will almost make one's hair to stand on end. Wires are fixed tightly across over each row of plants 7 feet in height, and from these lengths of soft yarn depend secured to the bamboo canes supporting the plants, whilst yet young; what an enormous produce should all these thousands of plants presently give. All plants are kept free of side-shoots; all are carefully watered, and later, when producing fruit, are fed with artificial manures. In the tenth house, there are on stages an enormous number, probably, some 60,000 plants in large 60-size pots, all stout and sturdy; these are being got ready to plant out in the ten other houses, now occupied by Cabbages, when these are cleared off. Holes are made in the ground, about the size of a 10-inch pot, these are filled with fresh soil and the plants put into them. In this way, in due time, the whole of this huge area of glass, becomes filled with probably some 100,000 Tomato-plants; really it becomes a vast Tomato factory. The Cabbages are planted out in the late autumn as soon as the Tomato-plants are cleared off, and very much as if in a field or garden. They are, just now, materially in advance of the outdoor breadths, and should be all sent to market ere any outdoors are ready; cutting is soon to commence. Of the many thousands of plants, not a bolter was to be seen. The crop is cleared in ample time to enable Tomato-plants to follow. Cucumbers are grown in great quantities in long, low span-houses, well heated. *A. D.*

Obituary.

MR. G. S. JENMAN.—My dear friend and your old correspondent, Mr. G. S. Jenman, the Government Botanist, British Guiana, and Superintendent of the Botanic Garden, George Town, died on February 28, aged fifty-seven years.

With him we lose one who had the best knowledge of West Indian Ferns of any botanist. I fear much of his work will now never see the light. I was, as you know, publishing in our *Bulletin* his *Ferns of the West Indies and British Guiana*, but alas! I fear I shall never complete it unless I can get his notes for the remnant.

He has long been in very bad health, so that the end was not unexpected. He was a true friend, a charming correspondent, and a thoroughly clear and accurate describer of the Ferns he loved so well, making few mistakes in nomenclature. Most of the species he named have been accepted, sooner or later, by other authorities. I have known him since 1875, or over a quarter of a century. He was diffident and nervous in public, but in private life he was replete with information on most scientific subjects.

His name must always be associated with the Demerara Botanic Gardens as that of their first superintendent. He was just preparing to take leave-of-absence from his official duties, which he had performed for sixteen years without a recess. *J. H. Hart, Trinidad.*

The *Argosy* of Demerara, March 1, in a sympathetic obituary notice, says:—

Mr. Jenman was a native of the south of England, but early in life he went with his family to the south of

Ireland, where his boyhood days were spent. When he reached his youth, he selected horticulture as the profession he was to pursue, and entered the world-famous botanical gardens at Kew. There he remained for several years prosecuting his studies both in theory and practice, with such success, that when a botanist was wanted to take charge of the Cinchona Gardens, Jamaica, the choice of the authorities fell on the young gardener from Ireland. After spending several years in that colony, Mr. Jenman was appointed Government Botanist and Superintendent of the Botanic Gardens of British Guiana, when these were instituted under Government supervision in 1879 (August 21). Under his care, the Gardens have been laid out and cultivated, what was once to all intents and purposes waste land being converted into one of the finest and most valuable botanical gardens in the West Indies. His experiments in tropical culture extended over a large variety of plants and growths, but what his name has been most closely associated with are seedling Cane experiments. At first, on his own initiative, and later, on the arrival of Prof. Harrison in the colony, in close association with the Government chemist, Mr. Jenman carried out a long series of experiments which have made the names of Harrison and Jenman almost household words wherever the Sugar-cane is cultivated.

[By the death of Mr. Jenman we lose a valued correspondent, many of whose descriptions of new Ferns were given to the public in these columns. We had also the opportunity of determining various species of *Passiflora* and *Aristolochia*, which he confided to us for the purpose, including the curious *Mitostemma Jenmanni*, *Passiflora deficiens*, *Aristolochia longicaudata*, and others. Ed.]

MR. GEORGE STEVENS.—The melancholy circumstances attending the death of Mr. George Stevens, at the St. John's Nursery, Putney, are deeply felt by many who knew him. He was for many years an active member of the National Chrysanthemum Society, a member of the executive committee from the first, a member of its floral committee, and an exhibitor at its shows. Owing to failing health he retired from the Society a few years ago, but he never lost his interest in its work, or in the Chrysanthemum; he was one of the founders of the Putney Chrysanthemum Society. As far as can be learned George Stevens was trained as a gardener, and in the early sixties he was engaged in laying out and planting what was then known as the Duke of St. Albans estate, on the left hand of the ascent from Putney Town to Wimbledon Common, and now covered with villa residences. He next went into business at Putney, taking advantage of the growing interest in the Chrysanthemum after the introduction of the Japanese types. He also grew plants and cut flowers for market, the double white Chinese Primrose in particular, and later he grew Carnations. He had two florists shops in Putney, and grew flowers for sale in these. He was a Fellow of the Royal Horticultural Society, and for a considerable time a member of its floral committee. Mr. Stevens had just come through a long illness, and he had been greatly depressed during the past three years, which was more particularly manifested since the death of his wife in October last. He was twice married, and had no children, but was assisted in his business by his stepdaughters. Mr. Stevens was sixty-six years of age at the time of his death. *R. D.*

FRUIT REGISTER.

DOYENNÉ D'HIVER.

THIS fine old Pear is well figured in the *Bulletin d'Arboriculture*, &c., for February. It is an excellent late variety, but requires a south wall to do it justice. It has no fewer than thirty-three synonyms, which shows that pomologists live in a fragile dwelling, and should not be too ready to rail at the botanists.

NEW INVENTIONS.

SELF-SUSPENDING BRACKETS.

AN invention of a very simple nature, useful to gardeners who make use of portable hanging shelves in forcing and greenhouses, which they remove when summer comes. The bracket is made in one piece, doubled on itself (not welded together) in such a manner as to form a loop by means of which it can be passed over an iron rod, or dropped on to hooks screwed into the principals of the roof. The shelf, formed by two pieces of board meeting in the middle, is dropped on to the horizontally turned up ends of the bracket. The uses of these brackets are manifold. The article, the invention of Mr. Alfred Savage, East Ham, London, is patented.

SOCIETIES.

ROYAL HORTICULTURAL.
Scientific Committee.

MARCH 25.—*Present*: A. D. Michael, Esq., in the chair; Rev. W. Wilks, Messrs. Worsley, Douglas, Chapman, Nicholson, Odell, Drury, Hooper, Boulger, G. S. Saunders, C. G. Shea, Drs. A. B. Rendle, Hugo, Müller, M. C. Cooke, and Masters.

Narcissus Disease.—Rev. W. WILKS brought specimens in which the bulbs and roots appeared healthy, but the leaves turned brown, and decayed from the tip downwards. The malady is stated to be widely diffused, but at present no light has been thrown upon its cause.

Hybrid Tropæolum, &c.—Mr. WORSLEY showed flowers of a hybrid raised between *T. Lobbi* and one of the garden *Tropæolums*. A hexamerous flower of a *Tydea* was also shown, in which the stigma was trifid. A zonal *Pelargonium* was exhibited in which the edge of the leaf was bordered with red, as happens in decaying leaves, whilst the flowers, usually white, were in this case suffused with salmon-pink in the centre.

Diseased Violets.—Some specimens from the Moor Gardens, Harlow, in which the leaves were shrivelled, but in which the root-development was very satisfactory, were referred to Mr. Douglas for examination and report.

Proliferous Strawberry.—Mr. HOOPER showed a coloured drawing of a Strawberry, in which small plants were developed on the receptacle in the place where the "achenia" ought to be (see *Vegetable Teratology*, p. 116).

Sickly Palms.—Mr. ODELL showed further specimens, which confirmed the opinions expressed at the preceding meeting.

Mites on Begonias.—Mr. SHEA adverted to this subject, and elicited the recommendation from the chairman to burn the roots forthwith if they were attacked by mite.

Grub on Rose, &c., taken from a tunnel in a Rose Stem.—Mr. CHITTENDEN sent a specimen for naming, and this on being submitted to Mr. Saunders has been determined to be the grub of some hymenopterous insect, such as causes galls on Roses, especially the form called *Bedeguar*, or Robin's Pincushion. Mr. Chittenden also sent the seed or pip of an Apple containing two embryo plants—the supplementary embryo having probably been developed from one of the synergids.

Peloria in Cattleya.—Dr. MASTERS showed an illustration of regular peloria in a *Cattleya* which he had received from Messrs. Veitch. In this flower there were three sepals of equal size and similar form; alternating with these were three regular flat petals, the lip being represented by a petal in size, shape, and colour like the lateral petals. This flower is probably a reversion to the earlier and simpler conformation from which the peculiar Orchid structure, as we now know it, has evolved. The column was in the normal condition. It is noteworthy that this flower was produced from the same seed pod as the hybrid between *Cattleya Schroderae* and *Brassavola Digbyana*?. Evidences of the cross were very obvious in the normal flower, whilst in the peloria the appearance was that of a degenerate *Cattleya*.

Cuscuta.—Dr. BONAVIA sent a specimen of a shrub from the Riviera, encircled by a *Cuscuta*, but the species could not be determined.

Schizophyllum commune.—From Chiswick came a fungus said to have grown on the "Panama Pear." The fungus was determined by Dr. Cooke to be the above-named species.

Pitcher on Leaf of Pelargonium.—Mr. COOPER sent a specimen showing a funnel-shaped leafy cup in place of the inflorescence (see *Vegetable Teratology*, p. 313, for a similar production on the leaf of a Lettuce).

MANCHESTER AND NORTH OF
ENGLAND ORCHID.

MARCH 6.—A numerous-attended meeting was held on this occasion, and groups of plants were sent from a long distance. Medals were awarded as follows:—

Messrs. Sander & Sons (Silver), Mr. J. Cypher (Silver-gilt), S. Gratrix, Esq. (Bronze), W. Thompson, Esq. (Bronze), and Mr. S. Allen (Bronze). Messrs. Low & Co and Mr. D. McLeod received Votes of Thanks.

A. WARBURTON, Esq., contributed a beautiful *Odontoglossum crispum* var. *Luciani*, which ranks with *O. c. apiatum* and *O. c. Pittianum* in point of beauty and gracefulness. A Gold Medal was awarded the exhibitor.

Mrs. S. GRATRUX exhibited a beautiful form of *Odontoglossum* × *Loecheiense*, distinct, each segment being marked with a large blotch.

R. BRIGGS-BURY, Esq., exhibited *Cattleya* × *Rosalind* var. *superba*, very finely coloured, and of good form.

Appended is the list of Awards:—

Odontoglossum crispum var. *Luciani*, Gold Medal, A. Warburton, Esq.

Odontoglossum crispum var. *Luciani*, First-class Certificate, A. Warburton, Esq.

Odontoglossum × *Loecheiense*, First-class Certificate, Mrs. S. Gratrix.

Dendrobium × *Bryan* (luteum and Wardianum), First-class Certificate, S. Gratrix, Esq.

Dendrobium × *Cybele* West Point var., First-class Certificate, S. Gratrix, Esq.

Dendrobium Backhouseianum, First-class Certificate, S. Gratrix, Esq.

Odontoglossum aspersum, First-class Certificate, W. Thompson, Esq.

Cattleya Rosalind superba, First-class Certificate, R. Briggs-Bury, Esq.

Cypripedium Minos Gratrix's var., Award of Merit, S. Gratrix, Esq.

Cypripedium Prince of Wales Lawrenceanum niveum, Award of Merit, S. Gratrix, Esq.

Dendrobium nobile West Point var., Award of Merit, S. Gratrix, Esq.

Cypripedium Miss Louisa Fowler, Award of Merit, W. Thompson, Esq.

Odontoglossum Loecheiense nobilium, Award of Merit, W. Thompson, Esq.

Odontoglossum Rossii majus var. *Amesiae*, Award of Merit, W. Thompson, Esq.

MARCH 19.—The meeting on this date was held in conjunction with the Royal Botanical and Horticultural Society of Manchester's spring show at the Free Trade Hall. There was a magnificent display, and the entire committee were present, in addition to foreign visitors, who were invited to assist.

Groups of Orchids were shown by O. O. WRIGLEY, Esq., consisting of a number of fine *Dendrobiums* for which a Silver-gilt Medal was awarded.

S. GRATRUX, Esq., had a unique collection of *Lycastes*, including choice forms of *L. Skinneri* and hybrids (Silver Medal).

T. STATTER, Esq., exhibited a fine collection of *Dendrobiums*, including some fine forms of *D. Juno*, *D. splendidissimum*, *D. Ainsworthi*, &c. (Silver-gilt Medal).

W. DUCKWORTH, Esq., staged a handsome group, containing good forms of *Cattleya Trianaei*, and numerous good *Dendrobiums* (Silver Medal).

W. THOMPSON, Esq., staged a group of *Odontoglossums*, in which a number of bright-coloured *O. Pescatorei* were remarked.

W. WATSON, Esq., had a pleasing group, consisting of *Cypripediums*, *Dendrobiums*, and *Cattleyas* (Silver Medal).

R. ASHWORTH, Esq., sent a beautiful collection of *Odontoglossums*, and a fine piece of *Dendrobium* × *Cassiope* (Bronze Medal).

Mr. J. CYPHER received a Gold Medal for a fine group, in which there were many beautiful species and varieties. His *Dendrobium nobile album* was, perhaps, one of the finest, and it was greatly admired, it being, as regarded form, far finer than *D. n. virgiale*, the flowers being substantial and well formed.

Messrs. COWAN & Co., Ltd., were awarded a Silver-gilt Medal for a miscellaneous collection, among which were some pretty plants. Mr. A. J. KEELING staged a group of *Cypripediums*, and some good plants of *Dendrobium* (Bronze Medal). Mr. J. ROBINSON was awarded a Silver Medal for a miscellaneous group.

Messrs. SANDER & SONS had a number of beautiful hybrids of *Phaius* (Silver Medal).

The awards made on this occasion were as follows:—

FIRST-CLASS CERTIFICATES.

Odontoglossum crispum Queen Alexandra, R. Ashworth, Esq.

Dendrobium nobile album, J. Cypher, Esq.
Cattleya Trianaei Amesiana, Hugh Low & Co.
Odontoglossum Adrianei Wellsianum, M. Wells, Esq.
Laelio Cattleya × *Broomfield* var., M. Wells, Esq.
Cypripedium × *minus* (Young's var.), R. Briggs-Bury, Esq.

Lycaste Skinneri alba *superba*, S. Gratrix, Esq.
Odontoglossum crispum, Sherlock Holmes, J. Lee-mann, Esq.

Odontoglossum crispum, Coronation, R. Ashworth, Esq.

Odontoglossum Andersonianum magoificum, R. Ashworth, Esq.

AWARDS OF MERIT.

Odontoglossum crispum Christopher, W. Thompson, Esq.

Cypripedium × *Euryades splendens*, W. Thompson, Esq.

Laelio-Cattleya × *Lucasiana*, Hugh Low & Co.

Lycaste amabilis, S. Gratrix, Esq.

Dendrobium pallens, A. J. Keeling, Esq.

Dendrobium Ainsworthi var., A. J. Keeling, Esq.

Odontoglossum hybrid, R. Ashworth, Esq.

Odontoglossum × *Adrianei* Lady Gladys, Charlesworth & Co.

CULTURAL CERTIFICATE.

Dendrobium × *Cassiope*, R. Ashworth, Esq.

ROYAL BOTANICAL AND HORTI-
CULTURAL OF MANCHESTER.

MARCH 18, 19.—The spring show under the auspices of the above Society was held in the Free Trade Hall on the above dates. The Hall does not lend itself to the purpose, being much too dark, and artificial light required throughout.

There was a good display, Orchids being a feature. This section is dealt with in our report of the Manchester Orchid Society's proceedings.

Messrs. DICKSON, BROWN & TAIT exhibited a magnificent lot of *Ilyacinths* and *Narcissi*, for which they were awarded a Gold Medal.

E. ASHWORTH, Esq., Wilmslow, staged a very fine collection of Orchids, some choice gems being shown. A peculiar and rare plant is that shown under the name of *Dendrobium Ashworthiae*; in appearance it looks very like an albino form of *Dendrobium atroviolaceum*, which perhaps describes it best; it comes from the same country as the latter, but it is recognised by botanists as a true species. The entire collection was choice, and several rare plants were to be seen. *Dendrobium Wilii* was shown with five fine flower-spikes.

O. O. WRIGLEY, Esq., sent a good collection of his strain of *Clivia miniata*, a distinct and brilliant addition to the show (Silver-gilt Medal).

Messrs. R. KER & SON, Aigburth, staged a number of their fine varieties of *Hippeastrum*, which seem to improve year by year (Silver-gilt Medal).

Messrs. DICKSON & ROBINSON, Manchester, made a good display with *Narcissus*.

Messrs. CUTNISH & SON, Highgate, staged *Ericas*, *Boronia*s, *Cyclamen*s, &c. (Silver Medal).

Groups of spring-flowering plants and bulbs arranged for effect were staged by the Earl of ELLESMERE (gr., Mr. W. B. Upjohn), 1st prize; JAS. BROWN, Esq., Heaton Mersey, 2nd prize; and J. WALTON, Esq., Newton Heath, 3rd prize.

All the groups of Orchids mentioned in the Orchid Society's Report were also part of the show. P. II.

WARGRAVE GARDENERS'.

MARCH 19.—Mr. A. S. GALT, F.R.H.S., the Berks County Council Lecturer in Horticulture, gave, on the above date, an address on "Horticultural Fads, Fancies, and Fables." It was of a most amusing but instructive character, and some excellent hints were given, which caused an animated discussion at the close of the lecture. The lecture was divided under the heads Mythical, Meteorological, and Practical Curiosities. Traveller's tales, weather-lore, gardener's fads and fancies, all came in for a good share of attention; and a hearty vote of thanks was accorded Mr. Galt for his interesting lecture.

There were some good exhibits staged. Mr. W. POPE, gr. to J. P. WHITE, Esq., was awarded a Cultural Certificate for a fine group of *Dendrobium nobile*; and Mr. W. BAZELEY, of the Twyford Nurseries, a Certificate of Merit for a plant, a cross between a *Clivia* and an *Amaryllis*. H. Coleby, Hon. Sec.

READING & DISTRICT GARDENERS'
MUTUAL IMPROVEMENT.

THERE was a good attendance of members at the last meeting of the above Association, when Mr. W. TOWNSEND, of the Gardens, Sandhurst Lodge, Wellington College Station, read a most practical and interesting paper on "Hardy Flowering Shrubs and Trees or Forcing"—a department of horticulture in which

this gardener excels. Many questions were asked, and an interesting discussion followed.

A fine display of flowers was made by the following members, viz.:—Honorary exhibits, Mr. TOWNSEND, including flowering sprays of twenty-five of the varieties of hardy flowering trees and shrubs mentioned in the lecture; Mr. J. W. Tims, gr. to Mrs. SIMONDS, a double-spathed Arum.

The entries for Certificates were made by Mr. E. S. Pigg, gr. to J. T. STRANGE, Esq., Aldermaston, group of flowering plants, including a bank of Van Zion, Princeps, and Golden Spur Narcissi, Cineraria, greenhouse and star types, Hyacinths, and Azaleas. Mr. F. LEVER, gr., Hillside, a group of flowering bulbs. Mr. House, gr. to W. POLE-ROUTH, Esq., Oakfield, three fine specimens of *Deutzia gracilis*, measuring a yard through; and Mr. W. G. Pigg, gr., Treveroli, Maidenhead, a plant of *Dendrobium nobile*.

SCOTTISH HORTICULTURAL ASSOCIATION.

THIS flourishing society, which seems to illustrate in a remarkable manner the unity existing among all classes of gardeners in Edinburgh and its neighbourhood, held a most interesting function on the 21st ult., meeting in large numbers, and dining in one of the principal restaurants in the city by way of celebrating the semi-jubilee of the society, it having been founded in 1876. Its flow of prosperity must have passed all bounds hoped for by its founders. It has now a membership of considerably over 1,000, and a large reserve fund; and the chairman said it had one member resident as far away as Demerara.

The chair was taken by Mr. C. Comfort, the President, a practical gardener of considerable ability, and a forcible speaker; and among the company was Bailie Brown, the Senior Magistrate; ex-Bailie Macdonald, Chairman of the Dundee Horticultural Association; while Mr. Richard Dean was present by invitation as representing southern horticultural societies. An excellent dinner having been dispatched, the chairman proposed the usual loyal toasts, followed by that of the Lord Provost, Magistrates, and Council of Edinburgh, which was responded to in sympathetic terms by Bailie Brown, who dwelt upon the efforts made by the municipal authorities to beautify the town in many ways; the work being done by the city gardener, Mr. J. W. McHattie, and upon the warm interest the Council took in the work of the Association; and announced the gift by the Council of a City of Edinburgh Victorian Prize Silver Cup for competition at the Chrysanthemum exhibition.

In a highly sympathetic speech, ex-Bailie Macdonald proposed the Scottish Horticultural Association, alluding to what is being done in Dundee in the same direction. This, the toast of the evening, was spoken to by the chairman in a manner which did himself and the society great credit. He traced the history of the society from its commencement, and showed that the present proud position of the society had been secured by the labours and hearty co-operation of the members, who were bound together by the one bond of common interest in horticulture, and were associated in promoting a love for the garden and flowers; that the commencement made twenty-five years ago was in a small way, but that the satisfactory position occupied by the Association that day was largely due to the energy and practical sagacity of the original founders, among whom was the honoured name of the late Mr. Malcolm Dunn.

In dwelling upon the exhibition part of the society's work, the chairman stated that on the occasion of the first show, so poorly was it supported that 18s. 6d. was the amount of the takings at the doors; but now so great was the measure of success which had come to them that they now took the large sum of £600; and when recently balancing up, they were able to give £100 to the Royal Infirmary, £50 to the Children's Hospital, and the same amount to the Royal Gardeners' Orphan Fund.

The toast of kindred societies was proposed by Mr. R. W. E. Murray, and responded to by Mr. R. Deau, who met with a hearty reception from the company. Other toasts followed, and the proceedings were protracted to a late hour, and were brought to a close in the orthodox Scotch fashion. The tables were charmingly decorated by plants and flowers contributed by the firms of Mr. John Downie, Mr. Thomas Fortune, and Mr. Matthew Todd.

CROYDON, KENLEY, AND PURLEY GARDENERS'.

AT the fortnightly meeting held at the Commemoration Hall, Kenley, on Wednesday evening, March 19, a paper was read on "Winter-flowering Carnations" by Mr. J. Smith, manager to Messrs. Vernon & Murry, market growers, Harlington, and formerly for six years Carnation-grower at Sandringham. There was a large attendance to hear an interesting and instructive address upon a popular flower. Mr. Smith being an expert, little margin was left for discussion, and he

gave some excellent hints as to how single-handed gardeners might become successful. The lecture was illustrated by specimen blooms of the leading English and American varieties.

BRISTOL & DISTRICT GARDENERS' MUTUAL IMPROVEMENT.

THIS Association held its meeting at St. John's Rooms, Bristol, on Thursday evening, when Mr. Daniels, of the Newport Gardeners' Association, gave a paper on "The Cultivation of the Cineraria." Judging from the discussion which followed Mr. Daniel's address, it was obvious that the Cineraria is very much in favour with the gardening fraternity of the district, and as the essayist remarked, it was deservedly popular on account of its free blooming qualities, making it an indispensable plant for conservatory and house decoration, especially the new type, "*Cineraria stellata*," which is extremely floriferous and most useful for cutting.

IRISH GARDENERS' ASSOCIATION, DUBLIN.

MARCH 21.—The quarterly meeting of this association was held at 15, D'Olier Street, Dublin, on the above date, the President being in the chair. After the transaction of the usual business, Mr. George Farmer, of the Royal Botanical Gardens, Glasnevin, gave a very instructive exhibition of lantern-slides of Orchids, mostly of botanical interest. The pictures represented some rare *Masdevallias*, *Pleurothallis*, *Restrepias*, *Maxillarias*, *Dendrobis*, *Malaxis*, *Cymbidiums*, *Cœlogynes*, &c.; and also some general views taken in the Gardens. There were capital pictures of *Daphne Blagayana*, and of the rare Bornean Pitcher Plant (*Nepenthes Rajah*), which flourishes so well in one of the cool Orchid-houses at Glasnevin. Mr. Farmer gave some interesting notes as to the habitats, cultivation, and insect-fertilisation of the various species illustrated, and was awarded a cordial vote of thanks for his exhibition.

The Chairman, in his remarks, said he hoped other young gardeners, and especially those connected with their own Association, would take up photography, or some other branches of study, and give the results to their members in a clear and simple way, such as had been adopted by Mr. Farmer for their benefit on that evening. *Correspondent.*

DEVON AND EXETER GARDENERS'.

AT the last meeting of this Association, Mr. R. Hodder, of Ponsonby Gardens, Torquay, was to have read a paper on "A Stroll in the Garden," but owing to domestic bereavement was unable to be present. His place was taken by Mr. A. Hope (Hon. Sec.), who gave a résumé of, and a commentary upon "The Rules of Judging," published by the Royal Horticultural Society. He drew attention to the great necessity there was on the part of competitors to adhere closely to the conditions of the schedule, and to bear well in mind the respective values of form, quality, uniformity, colour, and effective staging. In view of the forthcoming Rose Show at Exeter of the National Rose Society, he quoted what had been laid down as a necessary condition in show Roses, and what should be avoided in selecting specimens for exhibition.

The annual summer excursion will take place in July, when Dartmouth and Totnes will be visited, *via* the River Dart.

ANSWERS TO CORRESPONDENTS.

BOOKS: J. M., Boskoop. The *Horticultural Directory and Year Book*, published at 12, Mitre Court Chambers, Fleet Street, London, E.C.; also the *Garden Annual*, published at 37, Southampton Street, Strand, London, W.C.

CHINESE LILIES: *Tivia*. The flowers have failed to open owing to the plants suffering a check, but we are unable to say the cause of this, having no knowledge of the treatment you have afforded them.

CINERARIA STELLATA: R. M., Newbury. The flowers are very pretty.

CONTRIBUTION TO R.G.O.F.: A. C. Your contribution has been sent to the Treasurer, as desired.

CUTTINGS NOT TRUE TO NAME: F. H. P. If the facts are, as you say they are, we should think you have a valid claim against the vendor. A solicitor would advise you.

GARDENER'S APPOINTMENT: H. Jacoby. No charge is made. If intended for the current week, the notification should be sent not later than Tuesday.

FIG: F. B. The root is certainly dead, and also covered with fungus spawn; but we do not think the fungus is the cause of death, but only the consequence. Without knowing more of the particulars, we cannot give an opinion as to the cause of death.

NAMES OF PLANTS: G. S. *Retinospora obtusa* and *Erica carnea*.—T. C. 1, *Chionodoxa Luciliae*; 2, *Choisya ternata*.—M. B. We are unable to name varieties of Roses with certainty.—R. R. All but 2 are fine forms of *Odontoglossum* triumphans; 5, shows a remarkable difference in having the callus without the additional ridges on each side, a very handsome and finely-formed variety; 2 seems to be of hybrid origin, probably of the O. × *loochristense* class, although the flower is not yet developed. It may be that when stronger, the plant may exhibit more of the characters of O. triumphans, and approach it so closely as to render the difference of little importance. The form and crenulation of the lip is the chief distinguishing feature in the flowers sent. K. A. 1, *Polystichum angulare*; 2, *Asplenium Adiantum nigrum*; 3, *Polystichum aculeatum*; 4, *Lomaria spicata* (*Blechnum boreale*); 5, *Lastrea rigida*.—Orchid, *Lassevade*. 1, *Cypripedium villosum*; 2, C. × *Williamsianum*; 3, C. × *Murillo*; 4, *Oncidium Marshallianum*; 5, *Miltonia euneata*; 6, *Cypripedium* × *Harrisianum*; 7, *Odontoglossum triumphans*; 8, *Cypripedium* × *Atys*; 9, C. × *Eismannianum*.—J. C., *Preston*. 1, *Billbergia thyrsoidea*; 2, *Hebeclinium ianthinum*; 3, *Eranthemum puleheffum*; 4, *Anthericum lineare variegatum*; 5, *Centradenia rosea*; 6, *Strobilanthes* (*Goldfussia*) *isophyllus*.—J. P. *Saxifraga* (*Megasea*) *ciliata*.

NATIONAL CARNATION AND PICOTEE SOCIETY: Mrs. Nix. The annual subscription is five shillings, or more, at the option of individual members. The hon. secretary and treasurer is Mr. T. E. Henwood, *Auricula Villa*, 16, Hamilton Road, Reading.

PEACHES: J. M. W. The trees have set too many fruits, and they have naturally east some of them, and thus relieved the strain on the energies of the trees. The brown colour of the kernels is always found in fruits that have been shed.

ROSE-GROWING COMMERCIALLY WITHIN TEN MILES OF LONDON: V. C. C. Choose the medium clayey loams of Essex or northern Middlesex.

VINES: J. G. C. The Vine-leaves sent are suffering from *Brunissure* of the French (browning), caused by *Plasmodiophora vitis*, closely allied to the slime fungus which causes finger-and-toe in Cabbages. It not only attacks the leaves, but the shoots. All diseased parts should be removed and burnt, and the Vines syringed with sulphide of potassium, $\frac{1}{2}$ oz. in a gallon of water, or with the Bordeaux Mixture.

VINES: A. T. R. The leaves are attacked by a fungus that destroys the tissues of the leaves in patches, these patches dry up and drop out, leaving holes. Apply the Bordeaux Mixture, or sulphide of potassium (liver of sulphur) at the rate of $\frac{1}{2}$ oz. to 1 gallon of water.

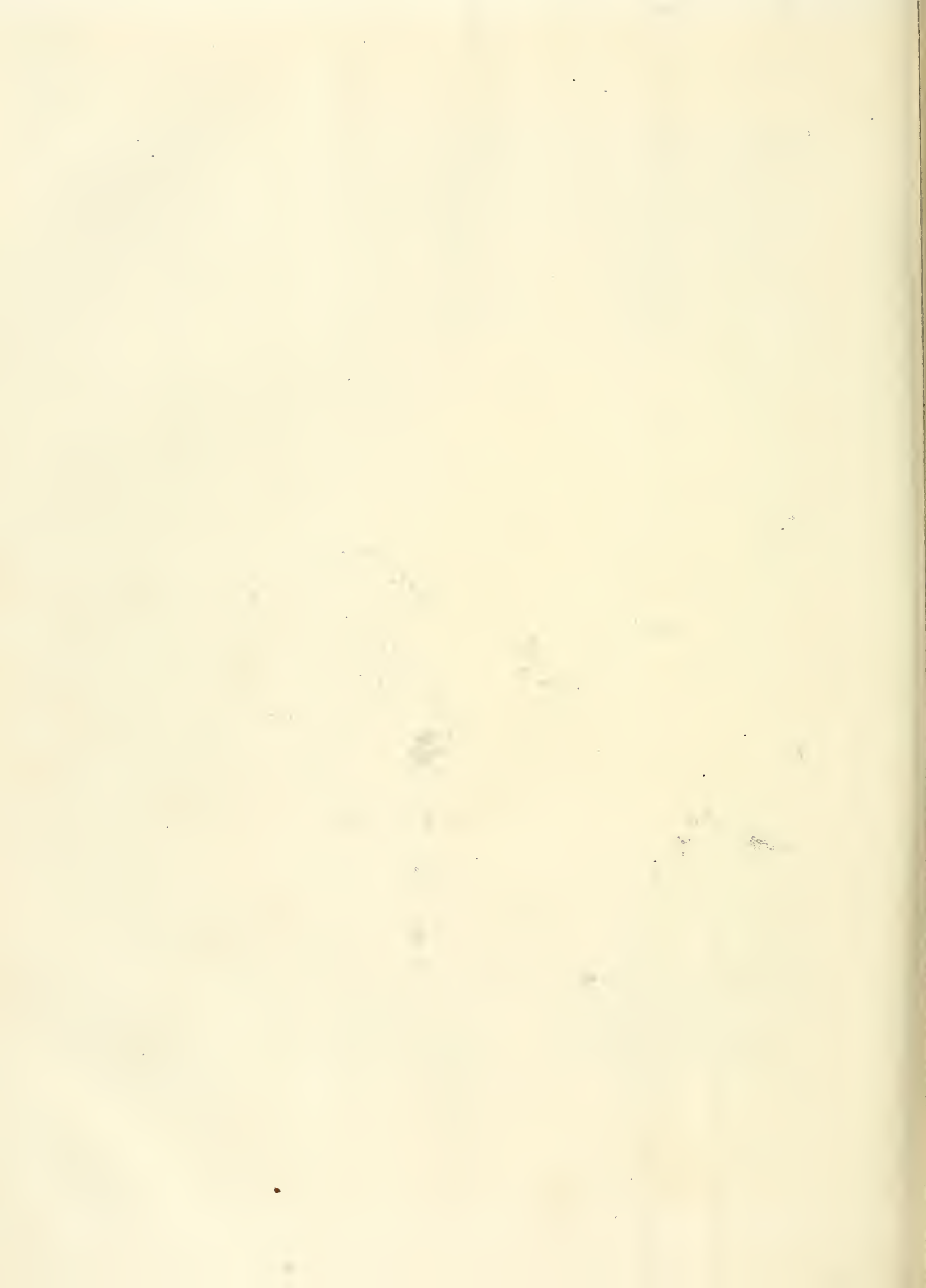
VIOLETS AND 12° OF FROST: A. P. No blooms would expand during a frost of this severity.

COMMUNICATIONS RECEIVED.—W. C.—J. G.—J. B.—W. R.—P. C. W. C.—W. H. W.—C. J.—W. M. W.—J. D. I.—B. H. & Co.—H. W. W.—F. A. P.—G. T. D.—W. A. G.—Palermo—J. R., Florence—Sir M. F.—Tilia—E. F. L., Bournemouth—W. Chuck—G. H. W.—G. G.—J. Thurston—W. E. B.—J. O. B.—R. D. T.—H. E. C.—W. H. R.—R. S. A.—W. G.—F. P.—H. L.—H. T. M.—W. C.—J. L. & Sons—J. Pentland.

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



JAPANESE GARDEN AT GUNNERSBURY HOUSE, ACTON: PHOTOGRAPHED BY J. GREGORY.



THE

Gardeners' Chronicle

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LAWN-MOWERS.

WITH the returning spring, lawns, whether extensive or limited, will be needing attention and preparation for the mowing season, and the machines should be got ready for use whenever required. In some localities the grass grows much earlier than in others, and many need mowing during March, but this work is not, as a rule, general before April. It is not advisable to begin earlier than is necessary, as sharp frosts are often experienced in March, and these may be injurious to grass newly mown. Many lawns become somewhat patchy and untidy when the grass grows irregularly, but this does not get very much worse if left alone until general growth begins, when the scythe should be passed over any of the worst places in advance of the mowing-machine.

In nearly all gardens the use of lawn-mowers has become general, almost to the exclusion of scythes; and there are so many, both in variety and varying sizes, to be procured, that their use is not to be wondered at. For instance, the circulars of three well-known firms of manufacturers, recently received, each include machines from 6 inches up to 48 inches. As a general rule, those cutting under 12 inches are only to be recommended for small lawns or tennis courts, and to amateurs who prefer to use the machine

themselves. Horse-machines, cutting 42 ins. and 48 ins., are full large, unless the lawns are extensive and the ground fairly level, or with long, gentle slopes. Perhaps the most useful size for general use in gardens is 12 inches, which is convenient for working almost anywhere on terraces or amongst flower-beds, and could be used by a man all day, and moved from place to place by him without further aid. The statements by makers that a given size can be worked by a man, man and boy, donkey or pony, &c., may be accepted in some instances, but they should be taken rather as extremes; a great deal depends on whether the lawn is level or otherwise.

Machines of different makers differ more in details of construction than in the general principle adopted for cutting grass, which is still that of a fixed horizontal blade, with which the spirally arranged cutting blades come into contact when revolving on what is called the cylinder. The number of knives varies in different machines, some being placed wide apart and fixed to revolve very rapidly for the special purpose of cutting long or rather rough grass. It is more satisfactory for the knives to be somewhat wide apart and to revolve rapidly rather than too close, as there are often patches of grass which are thicker and higher than the rest, and the knives get choked, and do not deliver the grass into the box.

Many machines are worked by cog-wheels, others by chain-gearing, the former being the stronger of the two, and it works at a greater speed, so that fewer cutting knives are requisite on the cylinder. Some people are partial to one kind of gear and some the other.

When the machine is first used in spring, the blade ought to be regulated, so that it does not cut too low, by means of the front rollers, which can be adjusted to the height desired. The knives should always work quite evenly all along the ledger-plate, and this can be tested by means of a piece of paper, which should be cut easily in any part. For adjusting the knives there are screws in many machines above and below the bearings which support the cylinder; but in others, strong springs are put beneath and screws above, so that it is only necessary to move the latter with a spanner in order to lower or raise the knives.

Occasionally provision is made for substituting side rollers for the front ones, and there are machines specially fitted in that way for cutting long grass. Some people dispense with the grass-box, which naturally lightens the machine for working, but does not answer very well when the crop is heavy, and leaves an untidy appearance from the grass being left on the ground. If the cylinders are reversible, and the knives become dull at any time, the cylinder can be taken out and changed end for end, which will cause the unused edges to come in contact with the cutting plate.

It is most important that all mowing-machines be kept clean and well oiled—that is, cleaned each time after being worked, and proper oil that is suitable for machinery must be used. Only an intelligent and careful man is fit to be entrusted with their management, and he should, if possible, always look after them. All machinery requires care and cleanliness, though this seems often to be forgotten with lawn-mowers that are not infrequently left exposed to the weather, and the knives corroded with dried grass, dirt, and rust. It is never advisable to take them any further than is necessary along a road, and if they

have to remain outside, a dry platform and a dressed waterproof cover should be provided.

A man who manages a lawn-mower ought to know how to adjust the front rollers and cylinder, and alter either if the work is unsatisfactory. It is best to stop immediately if anything is going amiss, especially if working with a horse. Whenever a breakage occurs, the part can generally be replaced by applying to the makers; and when a machine requires a general doing up it is, in most country places at least, advisable to take a similar course, and get it done in the winter. This is not always requisite every year, especially when cutters are reversible; but, of course, much depends on the amount of wear-and-tear, and whether the machine is used daily in summer, or only once or twice a week. The expense, including carriage, is quite sufficient, without having it done more often than is necessary.

At this season there is a good deal of work in preparing lawns for the machine, such as rolling, sweeping with a birch-broom, and picking up all stones that invariably get thrown on the grass from a carriage-drive. Small pieces of flint or pebbles are more dangerous than softer stones. If these come in contact with a knife it may be bent or a piece broken out, and this is not an easy thing to put right. A Gardener.

NEW OR NOTEWORTHY PLANTS.

FRITILLARIA ASKHABADENSIS.*

(See fig. 74, p. 238.)

THIS new Fritillary is of great interest, as being a second species of the subgenus *Petilium*, which up till now has only been known to be represented by a single species, the Crown Imperial. The present plant has similar leaves and inflorescence to the Crown Imperial, but the flowers are smaller (pale yellow slightly tinged with green), with oblong obtuse segments (in the Crown Imperial they are oblong-rhomboid), with a small round green nectary, concave as viewed from the face of the segment, and slightly convex when viewed from the back. It was exhibited at the Drill Hall recently by Miss Willmott, V.M.H., and naturally excited much attention. It was discovered by Sintenis, near the village of Kasakala, near the town of Askhabad, growing in calcareous soil, at an elevation of 1000 mètres above sea-level. These two places are not in Persia, as M. Micheli had supposed, but over the border, in the Trans-Caspian province of Russia. When M. Micheli exhibited to the French Horticultural Society on February 27, they gave him a first-class prize, with special congratulations, and a First-class Certificate of Merit.

Description.—Bulb globose, under 2 inches in diameter, with copious scales and copious cylindrical root-fibres. Stem robust, glabrous, erect, densely leafy, and green above the brownish base. Leaves sessile, ascending, the upper linear and whorled, the lower lanceolate, or the lowest oblong. Flowers about five, pendulous, subverticillate; pedicels cernuous, under an inch long; bracts small, erect, linear; perianth openly

* Micheli in *Journ. Hort. Soc. France*, 1902, p. 145. Bulbo magno globoso squamoso; fibris radicalibus cylindricis copiosis; caule valido stricto erecto folioso; foliis sessilibus nitidis viridibus, superioribus linearibus soepe verticillatis reliquis sparsis lanceolatis vel oblongis; floribus 5-6 protandris subverticillatis cernuis inodoris; bracteis linearibus parvis erectis; perianthio campanulato pallide luteo viridi tineto, segmentis oblongis obtusis prope basin nectarario parvo viridi impresso praeditis; filamentis elongatis linearibus; antheris linearibus pallide luteis; ovario cylindrico trilobato; stylo elongato apice tricuspidato.

campanulate, pale yellow, with a greenish tinge, above an inch long; segments oblong, obtuse, nearly half an inch broad, with a small, round, impressed nectary just above the base. Stamens nearly as long as the perianth; filaments linear, slightly pubescent; anthers linear, pale yellow. Ovary cylindrical; style tricuspidate at the tip, not developed till after the anthers. Fruit and seeds not yet seen. *J. G. Baker.*

LÆLIO-CATTLEYA × *GLADYS* (*Cogniaux*),
*hyb. nov.**

A new hybrid from *C. Harrisoniana* violacea × *Lælia cinnabarina*, raised in the houses of M. Fournier, of La Cavalière, Marseilles, by M. E. Cleverly, head gardener, who desired that it should be named after his daughter, Mademoiselle Gladys Cleverly.

The sowing was made on March 28, 1898. The flowers, which last for about two months in perfect condition, appeared for the first time in January, 1901, and again this year at the same date. *A. Cogniaux.*

ORCHID NOTES AND GLEANINGS.

DENDROBIUM × AINSWORTHII VARIETIES.

THE now bewilderingly large class of *Dendrobiums* that come under the above heading form one of the principal features in the Orchid-houses in the spring months, their showy, fragrant flowers being specially useful for cutting. A pretty set obtained by crossing *D. nobile albiflorum* and *D. aureum* is sent by Mr. Shill, gr. to G. W. Law-Schofield, Esq.,

tinged with purple; the middles of the petals and bases of the sepals bear numerous small red-brown spots, the sepals also having a cluster of larger spots in the middle. The shield-shaped fimbriated lip is apiculate, cream-white with yellow disc, and one large reddish blotch in front of the crest and small spots on each side.

FORESTRY.

THE DISEASE OF LARCH.

I SEE it is proposed by one of your agricultural contemporaries to institute further inquiry into the Larch disease. The suggestion comes, I have heard, from a well-known professor of forestry and agriculture,



FIG. 74.—FRITHILLARIA ASKANABADENSIS: FLOWERS YELLOWISH CREAM-COLOURED. (SEE P. 237.)

Pseudo-bulbs monophyllous, or diphyllous. Flowers from 2 to 3, width 9 to 10 cm. Sepals and petals erect, spreading, very pale rose, the centre marked lengthwise with a deeper tint. Lip sulphur-yellow, with the disc more orange, and a light rosy flush on the outer surface. Column rose, of a darker shade on the back, the fore part orange towards the base.

* *Lælio-Cattleya* × *Gladys*.—Pseudo-bulbis robustis, fusiformibus vel clavatis, apice mono-diphyllis; foliis coriaceis, oblongo-ligulatis, apice oblique emarginatis; pedunculo communi apice, 2–3 floro, basi spatha parva incluso, foliis longiore; floribus majusculis; segmentis erecto-patulis; sepalis ligulatis, acutis, lateralibus satis brevioribus falcatis; petalis oblongo-lanceolatis, acutis, subfalcatis, margine leviter undulatis, sepalo dorsali paulo brevioribus; labello sepalis lateralibus paulo brevioribus, ambitu late ovato-pentagono, profunde trilobato, lobis lateralibus columnam amplexantibus, apice subrotundatis crispulis, lobo terminali leviter recurvo, subrotundato, valde concavo subconduplicato, margine valde crispo; columnam claviformi, trigona, valde incurva—*Cattleya Harrisoniana* violacea × *Lælia cinnabarina*.

New Hall Hey, Rawtenstall, near Manchester, who calls attention to the merits of the variety called "Ethel Massy," which has large yellow-tinted flowers, with a maroon blotch on the lip. The other flowers all have a slight yellow tint in the sepals and petals, and some are tinged with rose colour.

ODONTOGLOSSUM × ANDERSONIANUM MAGNIFICUM.

For some time past the varieties of *Odontoglossum* × *Andersonianum* have not been special favourites, unless in the case of remarkable forms; want of size and breadth of petal are the chief blemishes. In the case of *O. × Andersonianum magnificum*, a flower of which is sent by Richard Ashworth, Esq., Ashlands, Newchurch, Manchester, the size and breadth of petal of an ordinary *O. crispum* are closely approached, while the beautiful marking of the flower renders it specially attractive. The flower is cream-white, slightly

and it has been suggested that the enquiry should be taken in hand by the Board of Agriculture. Whether the object be to find out the cause of the disease, or a preventive or cure for it, is not clear. The latter seems to me to be the most important, and the only thing to be done if Hartig's theory of the disease be correct. It has always seemed to me to explain everything; but putting aside those who dispute his statements on no tangible grounds, I understand there are authorities who do doubt his findings, and it would be interesting to know on what grounds. I dare say Professor Marshall Ward could tell us how the matter stands. In his translation of Hartig, he appends a foot-note stating that the *Peziza Willkommii*, though often overlooked, is quite common on diseased Larches in England and Scotland, with all the characters and relations to the blisters—which is true, only the casual observer does not often find it unless the little fructifications are present,

and late autumn is the season when they are most abundant.

Many foresters have got confused about the cause of the Larch-blister, and confound cause and effect with regard to it. For what we do know about the fungus which, according to Hartig, causes the disease, we are indebted to the Germans. In *Brown's Forester*, last

wound) there can hardly be any doubt, although, owing to some as yet unexplained cause, the disease to the Larch does not always lay hold with the same virulence under these conditions.

This brings me to the point that I would like to deal with. It has been supposed that the Larch disease is worst in Scotland, and

in the older woods close by, the Larches were quite sound. The whole neighbourhood is a Fir-tree county, all the Firs doing well, including the Larch, until disease attacks it, young trees making annual leaders over 3 ft. long, a length I have only seen exceeded on a similar soil in Leicestershire, where numbers of trees were making shoots over 4 feet in



FIG. 75.—PELORIA OF *LELIA DIGBYANA* ♀, × *CATTLEYA SCHRODERAE* ♂. (SEE P. 235 IN OUR LAST ISSUE.)

original edition, issued in 1882, it is not even mentioned, and one is left to guess what the author means by the Larch disease. He calls it the "unhealthiness prevailing" in Larch plantations, and evidently had never so much as noticed the fungus. Foresters differ among themselves as to whether late frosts or the Larch-aphis are the cause of the disease, and think the fungus is an after-consequence, but that these agents cause wounds at which the fungus enters (and, according to Hartig, the *Peziza* cannot enter the bark except at a

that the late frosts and snow-breaks are the two principal causes. That is a great mistake, as the disease appears in its very worst form in the South of England, where the frost is less severe, snowfalls light, and where the Larch reaches its maximum rate of growth, and produces timber of the best quality.

A few examples may suffice. On the shore near Snettisham, in Norfolk, and not so very far above high-water mark, there are, or lately were, some of the worst diseased plantations of Larch I have ever seen, although

length. The diseased Norfolk plantations consisted of pure Larch, about seven years of age; and the remarkable thing about them was, the rapid manner in which the disease appeared to have spread over all the trees, both trunks and branches being equally affected about the same time. The blisters appeared to have all burst out almost simultaneously, not beginning in the stem only and travelling up and on to the branches, as it is supposed to do, and which takes time. *J. Simpson.*

(To be continued.)

MELBOURNE.

THE descriptive matter, together with views of the Melbourne Botanic Garden, recently published in the *Gardeners' Chronicle*, were much appreciated, and we have received from many sources highly flattering letters in consequence. I do not think the Melbourne Botanic Gardens ever looked better than they do at the present time, and never during my twenty-eight years as Director have I witnessed so many handsome trees and shrubs blooming at once. The shrubberies and groups are perfect masses of colour. Of course, it must be admitted that the season is exceptionally favourable for such a display, as we are enjoying a fair amount of rain, whilst as yet we have not experienced any extreme heat.

Some of the Australian Myrtaceous trees and large shrubs almost dazzle the eye, so splendid are the blossoms. The well-known *Eucalyptus ficifolia* from Western Australia, with its bunches of bright scarlet, crimson, pink, and other shades; also *Eucalyptus calophylla*, another species from the same State, bearing immense heads of pearly-white on some individuals, and of rosy-red on others, are most striking objects on the margin of some of our spacious lawns of Buffalo-grass. The Callistemons, too, having become huge bushes of 10 or 12 feet high, and spreading in proportion, are wondrous masses of scarlet, maroon, or crimson and white. The same may be said of the Melaleucas, some of which are trees of considerable size. *Melaleuca genistifolia*, wherever it occurs in the landscape, might well be likened to a mound of snow, for not a leaf can be seen. *Metrosideros robusta* and *M. tomentosa* are clad in deep crimson, contrasting splendidly with their glossy, dark olive-green foliage. The former is known to the Maories as "Rata," and the latter as "Pohutukawa," or Christmas-tree. In the moist coastal ravines of New Zealand, the latter plant develops adventitious roots, becomes in reality a parasite, and, like some of our Australian Fig-trees when conditions are favourable, envelops the tree, no matter how large, upon which it is growing.

Well named indeed is *Calodendron capense*, or wild Chestnut of the Cape of Good Hope. It belongs to the order Rutaceæ, and is a noble umbrageous tree, foliage dark green, and the extreme point of every strong branchlet bears a large compact spike of fleshy pink blossom. "Beautiful tree" it is indeed, and several fine specimens which grace our lawns are admired by every visitor. (See *Gardeners' Chronicle*, Feb. 17, 1883.)

Some of the Erythras, or Coral-trees, have sent forth massive spikes of scarlet, and one group of these in particular is rendered more glorious by its proximity to some fine specimens of *Grevillea robusta*, whose branches are laden with orange-coloured flowers.

Golden-yellow Cassias and Acacias are abundant everywhere, often in delightful contrast with boughs of *Jacaranda mimosæfolia* bending with their weight of cœrulean blue-bells, or with Brazilian *Bougainvillea* robed in royal purple.

But of all the glories of our garden at this season, there is not, in the opinion of many, anything which can eclipse the splendour of the Flame-tree of New South Wales—*Sterculia acerifolia*. Of this tree there are many specimens distributed throughout the plantations, and one which has attained some 30 feet in height stands in the midst of some Date-Palms—one gorgeous pyramid of intense vermillion.

Mr. Bailey, the Government botanist of Queensland, thought I had discovered a very distinct

variety, with narrow leafage and peculiar bunches of rosy-pink blossoms, and named it after me; but alas! the seedlings raised from it have produced nothing better than (not one of them is like the parent) mere shades of colour, such as may be obtained from any tree in the garden. Bees are always at work, and we find a difficulty sometimes in determining the difference between a coloured *Eucalyptus calophylla* and *E. ficifera*—to begin with, the seed-vessels of both resemble each other in some respects. W. R. Guilfoyle.

NOTICES OF BOOKS.

OLD-TIME GARDENS. Newly set forth by Alice Morse Earle. A Book of the Sweet o' the Year. (New York: The Macmillan Company; London: Macmillan & Co., Ltd.)

IN adding to the many books of gardening-lore and legend, Mrs. Earle has made a bold venture. Yet we have nothing but praise to offer, for the pages record the sentiments of a genuine lover of plants and flowers, and are not interrupted by irrelevant details of the author's private life and predilections. The old-time gardens referred to are, principally, those of the so-called New World, which in this twentieth century is already rich in memories of the past. We have before us charming illustrations of gardens—real gardens, not neglected yards, nor the formal appendages to mansions.

Mrs. Earle does not pretend to give scientific information; she chats pleasantly, communing with herself and her readers. Botanical names she loves not, yet owns that in many cases it is want of familiarity that makes their sound unwelcome.

There is sympathetic talk here of gardens planted by settlers, often with seeds and roots brought with them into exile, and carefully tended for association's sake. Descendants of the original colonists still keep up and treasure this work of patience.

"Let me tell," says our author, "of two Lilacs of sentiment. They bloom over the grave of a fine old house, and the great chimney stands sadly in their midst as a grave-stone. 'Hopewell,' ill-suited of name, was the home of a Narragansett Robinson famed for good cheer, for refinement and luxury, and for a lovely garden, laid out with cost and care, and filled with rare shrubs and flowers. Perhaps these lilacs were a rare variety in their day, being pale of tint; now they are as wild as their companions, the Cedar-hedges. Gathering in the front dooryard of a fallen farmhouse some splendid branches of flowering Lilac, I found a few feet of cellar-wall and wooden house-side standing, and the sills of two windows. These window-sills, exposed for years to the bleaching and fading of rain and sun and frost, still bore the circular marks of flower-pots. . . . A few days later I learned from a woman over ninety years of age, an inmate of the poor-house, the story of the home thus touchingly indicated by the Lilac-bushes and the stains of the flower-pots. Over eighty years ago she had brought the tiny Lilac-slip to her childhood's home, then standing in a clearing in the forest. She carried it carefully in her hands as she rode behind her father on a pillion after a visit to her grandmother. She and her little brothers and sister planted the tiny thing, 'of two eyes only,' as she said. . . . The puny slip has outlived the house and all its inmates save herself, outlived the brothers and sisters, their children and grandchildren, outlived orchard and garden and fields. And it will live to tell a story to every thoughtful passer-by till a second

growth of forest has arisen in pasture and garden, and even in the cellar-hole, when even then the cheerful Lilac will not be wholly obliterated."

This extract is characteristic of the sentiment of the book. We might quote much more, but this will sufficiently indicate the matter awaiting the readers of these pages. There is much reference to old English herbals, gardens, and garden-lore, and frequent quotations from prose and verse writers. The chapter on sundials is sure to give pleasure, illustrated as it is with many pictures.

There is still room for books, even on the over-worked subject of gardens of romance, provided that they are as original, relevant, restrained, and generally pleasing as is this volume.

THOMPSON'S GARDENERS' ASSISTANT. (Published by the Gresham Publishing Co., 34, Southampton Street, Strand, London, W.C.; and at Edinburgh and Dublin.)

THE fifth volume of this re-issue of the older work embraces the treatment of all the hardy fruits of our gardens, and that of the Grape-vine, Pine-apple, Banana, Orange, Lemon, and Citrus group generally; Melon, Cucumber, Tomato, and fruit-preserving, packing, and storing. There are four coloured plates, including two varieties of the Peach, three of Cherries, two of Melons, and two of Tomatos. In every case of a variety being mentioned a brief note is given embodying its chief characteristics, and remarks as to cropping, training, forcing, season of ripening, and behaviour of the tree and its fruits, besides a quantity of miscellaneous information not admitting of classification. This rule is followed throughout, and excellent illustrations are inserted in the text, mostly prepared from photographs. Thus the Apricot is represented as a standard fan-trained and a dwarf fan-trained tree, and the kernel cavity is shown of different varieties to show differences of form, and entire fruits shown for a like purpose.

The chapter on Figs in pots, and on varieties, is well worth reading by the young practitioner. Cordon Gooseberries are recommended, and illustrations given of some of the methods of training. The Strawberry has a number of illustrations to itself, one of them indicating average sizes of about a dozen different varieties; but we must protest against the excessive number of varieties described, many of which ought in fairness to dealer and gardener to be consigned to the rubbish-heap, and a severely select list given instead. Elton Pine, described as being acid, most persons would call decidedly tart, and only passably eatable when preserved. We note a chapter on Filberts and Cobs, including a list of ten select varieties, as also one of Walnuts.

The Date-Plum, *Diospyros kaki*, which can be successfully grown in our warmest counties, has a chapter to itself, and a select list of varieties is furnished. As might be supposed, the Grape-vine comes in for very full treatment, and numerous illustrations assist the reader to an understanding of the text.

The different methods of cultivation pursued in English gardens are given, these including open-air cultivation in fields and on walls, in vineries, and in pots under glass. The descriptive notes on varieties are especially valuable, and the selection of varieties admits of but one improvement, and that is in a reduction of the number.

Readers will be surprised at the amount of matter devoted to the Tomato, and those who are acquainted with the latest introductions

will wonder at the omission of the most trusty out-of-doors varieties, namely, Sutton's Early, a nice fruit, with solid pulp, and almost as early as Earliest-of-All; Mortimer's Peerless, a great cropper, and smooth of outline; and Magnum Bonum, next in point of earliness to Earliest-of-All.

There is a very good chapter on fruit preserving, together with figures of apparatus.

SUNDRIES!

A VISIT to a great seed establishment or nursery usually impresses one with the importance and extent of the horticultural and grain crops in this country. Equally so will an inspection of a horticultural sundriesman's stock illustrate the exceedingly numerous needs of a gardener. Nor can the visitor fail

to see it answers very well. Specially selected peat for Orchids was being hand-pulled into smaller pieces, and by means of fine sieves all but the fibre taken away before the peat was packed into light wooden barrels for transmitting to purchasers. Leaf-mould and sand are kept in stock; and upon request we were shown a kind of leaf-mould for Orchid cultivators who are desirous of practising a system that has been discussed recently in these columns. Messrs. Wood call their preparation "Nidos," and it would appear to consist of loam, mould, and root-fibres, being similar to what is known as Belgian leaf-mould.

Next in importance to the rooting mediums, the gardener considers the question of manures. Messrs. Wood & Son provide animal manures, and pure chemical manures, to those who know sufficient to be able to apply these latter

any knowledge of the constituents of this fungicide, but there is ample testimony from well-known gardeners who have used the powder and the emulsion, to its efficacy in the destruction of fungoid diseases.

As a powder, it is recommended for mixing with the soil against slime fungus in Tomatos, and any other fungus the resting spores of which are at one season or another found in the soil. The emulsion is used for dipping and spraying plants affected, or likely to be affected, with fungi. As in the case of Chrysanthemum-rust, it is generally found to be necessary to use both these preparations. "Carvita" is recommended against disease in Carnations, and there are numbers of special insecticides and fungicides to which, as we are ignorant of their composition, we are unable now to make further reference.

The implement and tool department of the sundriesman is a large and interesting one. The need for spraying plants with certain liquids, and for applying to the leaves and branches tobacco and other powders, has given rise to innumerable devices to secure greater convenience in the operations. Our illustration (fig. 76) shows a small aluminium spray, holding 1 quart, that can be conveniently worked with but one hand, leaving the other free to hold the shoots or leaves as desired. The "Perfecta" syringe is another useful device. By means of an adjustable jet, it is possible to spray either directly forward or at any angle within an arc of 90° from the axis. It is a very quick-filling syringe, of full size.

Just as is the case in some financial statements, so from the gardener's point of view, the word "sundries" includes countless items, and we are unable to refer to a tithe of those stocked by Messrs. Wood.

THE AUCUBA.

COMMON as the spotted Aucuba undoubtedly is, still the plant of to-day does not, in my opinion, get its full meed of that recognition which from its many decorative qualities it so richly deserves. Imported from Japan in 1783, it enjoyed a popularity as an ornamental, evergreen, free-blooming diocious shrub, and a large well-grown specimen in a suitable position proved an attraction. By its green and golden sprinkled leaves it served as a colour foil to others more sombre tinted in its immediate locality. As "The Spotted Laurel," it held its own against all comers. True, it was, that according to Kämpfer, it being the female of the race, it should in the early spring-tide be enriched by a number of large, somewhat obovate, coral-coloured berries, fair in form, and lustrous; but for a time none such graced our English gardens, for here in this beautiful land of ours it had no mate. Then came the joyful news that Robert Fortune in China had found the species and a mate, and the long-wished-for stranger "was shipped," "was on the seas," "was come," "was landed," and was "to be seen blooming in all its beauty;" and then anon the lady-plant, adorned in natural jewels rare, graced our gardens, nay, our very dining-tables, with her new and blushing beauty. Small plants sold for large prices, for it was said, and this truly, the seed would grow, and so readily reproduce, as like produces like. But it was hardly this, for Fortune sent a lesser kind, one of dwarfer growth, green in foliage, and in berrying wonderfully prolific. It was called "vera"; and yet another more robust, and if I remember rightly, one green-leaved and margined yellow, called *limbata*. The old sort, the new one, and all were admired again and again. They



FIG. 76.—WOOD'S IMPROVED SPRAY: HANDLE AND BULB CAN BE CONTAINED CONVENIENTLY IN ONE HAND.

to realise that the means now employed to satisfy those needs constitute a large industry.

It was with such reflections as these that we inspected quite recently the premises and stock of Messrs. Wood & Son, Ltd., which adjoin the Wood-Green Station of the Great Northern Railway.

The primary needs of a gardener are rooting mediums for his plants, such as loam, peat, leaf-mould, sand, and sphagnum-moss; and few gardens are situated where it is possible to obtain all of these without buying any.

If the most favourable conditions obtain, and "good pasture loam" can be got for the hauling, then it is very likely that peat for the hard-wooded plants, and especially for the Orchids, must needs be purchased from a distance, and silver-sand and sphagnum-moss also.

"That is Surrey and this Northamptonshire loam," said a son of Mr. Jas. L. Wood, managing director. "The latter is not quite equal to the Surrey loam, but for many pur-

successfully; but a larger trade is done with the mixed chemical manures, varying in their ingredients according to the crop for which they are recommended. The most important of these is *Le Fruitier*, specially recommended for Vines, but applicable to most fruit-trees. Its action is described as less quick, but more permanent than some others upon the market, and very good testimony is forthcoming from practical fruit-growers. Special manures for lawns, Roses, and for Carnations are manufactured in quantity.

The question of insecticides and fungicides is a large one. In this particular again many gardeners prefer a preventive ready mixed, or requiring only to be diluted with water, to making their mixture themselves of known ingredients. This may not be always the wisest course, but it is a fact that many gardeners dislike mixing their own chemicals, whether for manures, or for insecticides or fungicides. It is for these that Messrs. Wood's "Veltha" was manufactured. We have not

were talked of, exhibited, written about, and then like most other things about which Fashion rages, it being no longer novel, the flourish of trumpets subsided, and then came the usual silence of neglect.

Now, I doubt very much whether Robert Fortune himself ever had any idea what an extent of variety would come of the welcome find and importation, nor do I believe either that the gardening public of to-day realises what a wealth of curious and varied forms, foliage, heights, growth, markings, colourings, and grandeur as a shrub the *Aucuba* presents. In some instances it is almost a tree. To the close observer or the true gardener these plants are wonderful, and far outvie many other groups of plants as fit adornments for our lawns and shrubberies. Even the Holly and the Ivy lose by comparison, for not a few of the large green-leaved *Aucubas* are stately in the extreme, and when bedecked with their gaily red and glistening fruit, they are simply grand.

I think it was the late Maurice Young, of Godalming, who got the first and most attractive "break" in both sexes. They had long, narrow, dark green and most elegant foliage, and are, I believe to this day, known as *Aucuba Youngii*. But now, the varieties are bewildering, and selection is rendered difficult, though pleasurable. In a bed of two or three hundred seedlings, some are broad-leaved, dark green, or light green, and some almost emerald; then, with the same colouring, there are narrow-leaved, some toothed, others not, and some will show almost oval leaves. Some are thick in substance, others thin; some with crimson berries, others with more of the orange tint, and some even yellow or white; and the berries again in an open place where they can be well seen, while others are down among the greenery. Then, apart from all the different forms of foliage, habit, style, and growth, comes in the variegation. Here again the changes are wonderful and beautiful; the deep green "peppered" with gold or silver, or freckled, some with scarcely a dot or a blotch, others as scarcely green; some with a tendency to all gold, and some with a gold centre and a green edge; others with green centre and gold edging; and the habit of all just as much differentiated. If variety is charming, surely we get it in the *Aucuba japonica* of to-day. In every way and almost in any situation the shrubs are valuable as dwarfs, and for size, sometimes almost trees. Their decorative power is great, and they are attractive in all ways. Hardy and beautiful, the *Aucuba japonica* has now become charming for the pleasure-ground or the garden, little or big, for it is a host of itself. *Harrison Weir, F.R.H.S.*

The Week's Work.

THE ORCHID HOUSES.

By W. P. BOUND, Gardener to J. COLMAN, Esq., Gatton Park, Reigate.

Cælogyne.—The plants of *C. cristata* and its varieties may have grown so large as to require dividing, and others will need top-dressing and repotting. A suitable compost for this plant consists of one half turfy peat, one quarter turfy loam, which if very heavy and not containing much fibre, may be used in less quantity, one quarter clean chopped sphagnum-moss, the whole being mixed together. The pans in which the plants are to be grown should be fairly well drained, more drainage being afforded when the plants are standing on a stage than to those suspended; and in potting let the rhizomes be placed only a trifle higher than the rim of the pan. When the

pseudo-bulbs are much crowded together, carefully pull them apart, and remove some of the back bulbs; if it be desirable to retain the plants of specimen size, they may be placed together, and proper space left for the development of the growth. By this means the plant can be made equally floriferous all over, and still afford space for the leads that were cramped before to develop. By removing a few of the old pseudo-bulbs, and directing the leads to the desired positions by means of a peg, a specimen plant may for many years remain undisturbed, a top-dressing occasionally being the only thing required. In order to increase the stock of plants, three or four leads possessing not more than three old pseudo-bulbs behind each lead may be placed in 6-inch pans in the soil mixture named. The back pseudo-bulbs cut away from the leads when making up a large specimen soon break, if they are laid on a stage. An intermediate-house affords a suitable place for them. At Gatton Park they are grown amongst the *Cymbidiums*; and providing the plants have abundance of air, and a temperature which does not fall below 50° in winter, there is no difficulty experienced in their cultivation. Water must be carefully applied after flowering, and till the growth gets well advanced, remembering that the cooler the plants are grown the less need for water will there be at the root. The season when water should be freely applied is when new growths begin to develop their pseudo-bulbs.

General Remarks.—Most of the plants in the houses, now show signs of activity, and the grower has it very largely in his power to afford them such treatment as shall assist them to make the fullest and best growth possible. The five principal matters to be attended to are, judicious shading, proper ventilation, careful watering, damping, and spraying.

Shading.—By judicious shading is meant the arrangement of the plants in the houses in such a manner, that the shade-loving Orchids can be shaded without excluding sunshine from those species that are capable of deriving benefit from it. In most houses we find some of both classes, and it is often necessary to have a curtain inside the house to protect those that dislike direct sunshine; not only are the sunshine-loving Orchids benefited by this arrangement, but the shade-loving Orchids too, derive benefit from the sunshine being allowed to illumine the other portion of the house. The blinds should never be used until they are absolutely necessary, and they should be raised again as soon as possible. The early morning and late afternoon sunshine is a great stimulus to the plants.

PLANTS UNDER GLASS.

By J. C. TALLACK, Gardener to E. MILLER MUNDY, Esq., Shipley Hall, Derby.

Calceolarias may be treated similarly to *Cinerarias*, see Calendar for April 5; the manure-water helping to develop tall, branching stems and fine flowers in both cases. The house or brick-pit should be kept cool and rather moist, and the plants shaded from direct sunshine.

Hibiscus.—Where these plants can be afforded a place in an intermediate-house they flower profusely, whereas in a stove they are not so readily managed, and the flowers are sparsely produced, and a greenhouse is too cool for them. Cuttings of *Hibiscus* may be struck at this season, the rooted cuttings being planted out on a mild hot-bed or in a warm spot out-of-doors, and potted in August or early September.

Centropogon Lucyanus.—This is a favourite stove plant, which should be treated in a similar manner to *Hibiscus*, and cuttings should be struck annually. Aged plants may be cut back at this season, and induced by syringing and warmth, to make shoots.

Caunas.—Plants for flowering in the autumn should now be divided into single crowns and potted in rich soil, and grown on for a time in a forcing-house, provided they are afforded

plenty of sunlight. I prefer to place them at once in the flowering-pots, as being both a saving of labour and a benefit to the plants.

Pelargoniums.—The various types will now require attention; the show and Regal sections will be in need of a few neat sticks and ties, so as to give the plants a nice shape; and as at this date the flower-trusses are being thrown up, more manure-water should be applied. The Ivy-leaved species and varieties are growing rapidly, and they will need a similar kind of treatment, affording manure-water, being more advisable than repotting at this season.

Climbers.—Many of these plants, especially those of the stove, are growing freely, and rendering a frequent training of the shoots very necessary. *Dipladenias* suffer greatly from any neglect of the training of the shoots, and *Myrsiphyllum asparagoides* is another plant that needs almost daily attention. A secondary but important reason for giving frequent attention to these and other climbers is the opportunity thus afforded for detecting stray examples of mealy-bug, and any of this pest destroyed at this season means a great lessening of the numbers later on.

Chrysanthemums.—Young plants should now be shifted into 6-inch pots, provided they are fairly well rooted. The soil at this shift should be good, but not overloaded with manure.

Clerodendron fallax.—Let the young seedlings or plants raised from cuttings be potted before they have become pot-bound, this being a plant that should never be in the least degree starved at the root. The soil should consist mainly of a fairly rich turfy-loam, three-fourths leaf-soil, and one-fourth coarse sand.

Tuberous-rooted Begonias.—The main batch of these plants should now be potted up for flowering in the autumn months, the soil provided being a porous one. *Begonias* of this section are not particular, but I would advise a fair quantity of dried decayed cow-manure being mixed with the soil, as tending to healthy growth and long flowering.

Fuchsias.—*Fuchsias* struck in the autumn of 1901 may soon be shifted into the pots in which they will flower. As I have before mentioned these plants, I need only say that they should be afforded a good loamy soil, moderately enriched with artificial or other manure, and grown freely, being well syringed twice a day, and the house closed early, allowing the warmth to rise with sun-heat to 85°. In order to produce good plants, the leading shoots must be tied up, and for the present stopping of the shoots should not be carried out.

FRUITS UNDER GLASS.

By JAMES WHYTOCK, Gardener to the DUKE OF BUCCLEUCH, Dalkeith.

Vines in Pots.—The earliest of these will ripen their fruits during the present month, and the house must be kept drier with a small quantity of air afforded constantly. The night temperature should be kept at 60°. If the pots are plunged, water must be very carefully applied; and in any case, less water will now be needed, and no manure in any form.

Earliest Permanent Vines.—These, if the fruit is swelling for the second time, will be the better for an application of manure-water at the roots. For the present the temperature at night should be 65° to 70°, and at closing time in the afternoon 85° with much moisture distributed about the vinery. Let the Vines be frequently inspected, removing the lateral shoots; and when the Grapes begin to change colour, let the temperature be reduced to 60° at night, with a small amount of top air afforded them and also by day, and keep the air drier. On early Vines red-spider is apt to show itself, but this pest can be checked by coating the pipes with flowers-of-sulphur after the seeds have formed, or by sponging the leaves with weak liquid XL-All insecticide.

Muscats.—The Vines that were started early in January should be afforded a night

temperature of 75°, and during the "stoning" period growth is all but stationary. Apply air early in the day in order to avert scalding of the leaves and berries, closing in the afternoon with the heat at 85°, and damping down copiously.

Vines Started in February or March.—The Vines are making rapid progress, and the laterals, one to each spur, will require to be brought down to the wires by degrees. In the case of young rods which are breaking at every bud, remove the shoots right and left to 15 inches apart. The Hamburgh vinery, as the Vines are approaching the flowering period, should be kept at night at 65°. Muscat Vines, when in flower, should be afforded 75° at night and 15° more with sun-heat by day; keep the air of the vinery moist, and when the bunches are in flower, draw the hand down over the bunch, so as to distribute the pollen. The interior borders having been afforded sufficient water and top-dressed with Vine-manure when the Vines were started, will require nothing more until the fruit is set, when another sprinkling of Vine-manure and a copious application of water may be called for.

Vines coming into Growth, should be afforded a night temperature of 60° to 65°, and be syringed twice daily, closing the vinery in the afternoon at 80° with sun-heat, and damping down abundantly.

Strawberries.—Ripe Strawberries are now plentiful, and the remaining plants require but very little heat in order to get them into flower. The plants may stand on shelves or in a pit, so long as they are near to the glass; and the night temperature should be about 55° till the fruit is set, when 65° will be suitable, with a rise of 10° to 15° by day. If the plants on starting were not top-dressed with an artificial manure, such as Veltha, and some fresh soil, it may be done after the fruit is set and thinned. Plants standing on shelves must be examined twice daily, and water applied where required, and occasionally soot-water, &c., continuing this till the fruit begins to colour. While the fruit is developing in size, syringe the plants twice daily, and keep the air moist; when ripening, let the air be less warm, and do not distribute much water about the house.

THE KITCHEN GARDEN.

By T. TUBTON, Gr. to J. K. D. WINGFIELD DIGBY, Esq., Sherborne Castle, Dorset.

Tomatos.—The seed of Tomatos for planting out-doors should be sown thinly in pots or pans, and these placed on a shelf near the glass, so as to ensure sturdy growth in the seedlings; and when large enough pricked out into boxes and afterwards shifted into 5 inch pots. I still put my reliance in Early Ruby for planting in the open, but Sutton's Winter Beauty is a wonderfully heavy cropping variety, with a strong constitution. I intend this year to afford it a warm position in the open, and also to plant it against a warm wall along with Sutton's A1.

Vegetable - Marrows.—Seeds may be sown forthwith in heat, and the plants set out in May in the forcing-pits or frames now occupied with Potatos. The seeds may be sown in 4-inch pots to the number of three or four, and thinned to two when it is seen which are the stronger.

Peas.—Put stakes to any that are now in need of support and protection, the Pea-guards being removed and placed over later sowings just coming through the soil. In staking, place the sticks 5 to 6 inches from the plants, and push them slantingly into the soil. By putting the sticks into the soil in this fashion, small sticks are but little needed to keep in the haulm within the rows of sticks till the tendrils lay hold of the latter.

Potatos.—The tubers may now be planted with comparative safety in all parts of the country, and an effort should be made to finish the planting by the middle of the month. If the soil is heavy, and it was ridged when dug in the winter, a liberal dressing of leaf-mould

and about one-fourth of its bulk of charred garden-refuse, well mixed together, may be scattered along the furrows before and after planting. Planted in this manner, the crop of tubers will turn clear in the skin. In light soils the sets may be planted with a blunt-ended dibber. It is advisable to break up with the Dutch-hoe the crust of land that was dug some months ago before beginning to plant the sets, thus killing weeds and aerating the land. Plant early varieties at 2 feet from row to row, and 1 foot apart in the rows, and main and late croppers at 2½ feet to 3 feet apart from row to row, and 15 inches apart in the rows, according to the strength of haulm.

Broad Beans.—Make one or two more sowings in the open quarter according to the demand; and for a supply throughout the month of August a larger sowing may be made next month on a north border, sowing in trenches at 4 feet apart on ground not recently dug. The trench should be thrown out with a spade, and short dung put on the bottom, and after setting the seed in two rows at 1 foot apart, draw the thrown-out soil over them. For the late planting I prefer Green and Broad Windsor.

THE FLOWER GARDEN.

By R. DAVIDSON, Gardener to EARL CADOGAN, Culford Hall, Bury St. Edmunds.

Campanulas.—*C. pyramidalis* and *C. p. alba* are excellent plants for outdoor and indoor decoration when well managed, looking well in the pleasure-grounds when grouped in beds and borders. Plants raised from seed last spring, which have been wintered in cold frames, may now be transferred to suitable prepared situations, making the soil firm about the roots, and keeping the crowns slightly above the level of the ground. Seed of these plants obtained from selected specimens may now be sown for next year's blooming, when the seedlings are large enough potting them on as required, in a rich, loamy soil.

Violets.—The propagation of the Violet by lifting strong, healthy one-year-old plants that have ceased to flower, separating the young crowns, and planting these singly into 60's in a mixture of two-thirds loam, one-third leaf-mould, and about one-sixth part of the whole of road-grit, is a satisfactory method of obtaining strong young plants. Having applied water to the soil in the pots, place them in a common frame, near to the glass, with a bottom-heat of 65°, and keep close, and slightly shaded from strong sunshine for a fortnight. Afterwards gradually inure them to the air, and plant out in their permanent quarters in the middle of next month. The best place for Violets in the summer is a north or north-west border, but a good deal depends upon the local climate and the nature of the soil. It is of importance that the soil should be well-enriched and trenched, and have some charred garden-refuse worked into the soil near the surface; and if it be stiff and retentive, some lime-rubbish incorporated with it during the digging does good. Violets do not require much attention in the summer beyond slightly stirring the surface soil occasionally with the hoe, and to be afforded water in dry weather. Those intended for early winter-flowering should be denuded of the runners as fast as they appear.

Ivy.—From a decorative point of view, there is scarcely any evergreen more useful than Ivy, and a number of plants of the different varieties should be kept in pots. Ivies are easily propagated by cuttings, or by grafting on the common Ivy, and the present season is perhaps the most favourable time to do this work. Ivy on walls usually gets clipped once a year, but this is not often enough for strong growers, and three times during the year is advisable, that is during the present month, again early in the month of August, and a final trimming in autumn. By so doing a smooth even surface of foliage is obtained, the sparrows are prevented from roosting therein, and it is not easily detached from the wall by

the action of the wind. Varieties that are of slow growth, and which do not cling readily to walls, should have their shoots regulated, nailing these neatly thereto.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bickton, East Budleigh, Devonshire.

The Apple and Pear.—The bushes and pyramids show especially well for bloom this season. Where an extension of the branches is desired, and the leading shoots were not shortened at pruning time, it will often be found on examination at this date that the points of these shoots are set with blossom-buds; and wherever such is the case, let these buds be rubbed off, or the shoots cut back to a wood-bud. This applies likewise to wall and trellis trees. Any protection afforded to the blossoms on wall Pears should be removed as soon as possible after the fruits are set, unless very cold weather should occur, when its removal may be delayed for a time. Bushes and pyramids of the Pear now coming into flower may, if not of too large a size, be afforded protection by sticking in large, spreading Pea-sticks, and covering these with scrim canvas; but unless such can be kept clear of the blossom, I consider more harm than good is done by it in windy weather.

Miscellaneous.—The rainfall almost everywhere has been less than usual, and it will be advisable to ascertain the condition of the soil as regards moisture wherever trees and bushes have been planted recently, more especially trees against walls and those in well sheltered spots. If water is found to be necessary afford it in the morning, so that it may sink some depth into the soil before nightfall, frosts being still common, even in Devon. The Black Currant bud-mite should be sought for, and if found, cut the affected shoots hard back and burn the severed pieces, and spray the bushes again with the caustic soda wash. Ply the Dutch-hoe between all bush fruits, and on Strawberry and Raspberry plantations, cutting off all suckers springing up far away from the shoots.

MEDICAL BOTANY.—The extraordinary development of physiological botany during the last half century has not been an unmixed benefit. It has to a large extent ousted systematic botany, which in olden times had in its turn too exclusive attention. Botany has been eliminated from the curriculum of study demanded of medical students. Certainly, more is expected of the medical student than he can possibly digest even in the five years pupillage now required. Still, in the olden time, three complete years were considered sufficient, and one of the subjects then required was at least the elements of systematic and especially of medical botany. Had the practitioner mentioned in the subjoined paragraph possessed even the rudiments of medical botany, he could not have fallen into the astonishing errors which, if he is correctly reported, which we doubt, he is alleged to have committed. A boy, it appears, "picked some roots" on the towing-path near Hammersmith, ate one, and shortly afterwards became very ill. In spite of medical assistance he died. The medical man who attended to the boy is reported to have expressed himself as follows:—"He was of opinion that the long, radish-shaped roots, resembling Horse-radish (produced), were the black or garden Nightshade (*Solanum nigrum*), and the deceased boy's symptoms tallied with the recorded cases of death from that poison. One berry had been known to kill a child, but the root was much stronger." Whatever the plant really was, it would be difficult to make so many mis-statements in an equal space. [We have since learned that the roots were those of (*Eranthe crocata*). Ed.]

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 thankfully receive and 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.

TUESDAY, APR. 15—
 { Cornwall Daffodil and Spring
 Flower Society's Show at
 Truro (two days).
 { Daffodil Show at Ipswich.
 { Ancient Society of York Florists
 (Members' Exhibition).
 WEDNESDAY, APR. 16—
 { Liverpool Hort. Assoc. Show of
 Plants and Flowers.
 { Royal Botanic Society Meeting.
 THURSDAY, APR. 17—Linnean Society Meeting.

SALES FOR THE WEEK.

MONDAY, APRIL 14—
 At 67, Cheapside, Perennials, Lilies, &c., by
 Protheroe and Morris, at 12.
 TUESDAY, APRIL 15
 Roses, Palms, Bays, &c., by Pollexfen and Co.
 WEDNESDAY, APRIL 16—
 Palms, Sweet Bays, and other Decorative and
 Flowering Plants, at Stevens' Rooms, at 12.30.—
 Palms, Lilliums, Bulbs, &c., by Protheroe & Morris,
 at 12.—Orchids, &c., by Reidell & Searle, at 1.
 THURSDAY, APRIL 17—
 Various Plants, by Pollexfen and Co.—Orchids,
 Glasgow, by John Cowan.
 FRIDAY, APRIL 18—
 Orchids in great variety, by Protheroe and 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
 —48° 3'.

ACTUAL TEMPERATURES:—

LONDON.—April 9 (6 P.M.): Max. 48°; Min. 37°.

April 10.—Dull, cold.

PROVINCES.—April 9 (6 P.M.): Max. 48°, Scilly Isles;
 Min. 40°, Orkneys.

Forestry in Ireland. DR. SCHLICH lately addressed a letter to the *Times* on this subject, with the spirit of which we must all sympathise. We all regret that so much wearisome and disheartening delay occurs in this and similar matters. Committees are appointed, suggestions from the most competent authorities are made, and various proposals are set forth, and yet but little is done. It is true, in the case of Ireland, that something has been done to promote the fishery industry; but attempts to enable the farmer to obtain a livelihood from his little holding have mostly proved abortive, except where the land is of exceptional fertility. Having obtained a first-hand acquaintance with the state of affairs over a large portion of Ireland, Dr. SCHLICH is satisfied that the small farmer in the congested districts would be really and substantially helped by the afforestation of lands not required for agriculture and grazing, including fencing to exclude cattle.

"Nearly half a million acres in county Galway," says Dr. SCHLICH, "are waste land, which yields a miserable income of a few pence a year per acre, or nothing at all. About two-fifths of the area are turf, bog, and marsh, of which only certain portions would at present be fit for planting, but, on the whole, I am satisfied that more than 100,000 acres, and perhaps up to 200,000, are quite good enough for planting. Even if we take the smaller figure, the afforestation of the area would involve labour valued at, say, £300,000. Just imagine the benefit to the poorer part of the population if, say, one-twentieth of that amount, or £15,000, were

spent annually on this scheme, and it may be that the sum would be double that amount, or £30,000. At the end of twenty years, when the planting has been finished, work in the forests would commence, regularly and for ever, on an increasing scale. A steady trade in timber would spring up, and, above all, local industries would develop, working up the raw material derived from the forests.

We have, of late years, imported timber to the value of £25,000,000 a year, apart from wood-pulp. Amongst that timber are thousands of tons of Birch, which is used for bobbins. Is there any country better suited for the growth of Birch than Ireland? Or, take Spruce and Scotch Pine, of which, especially the former, wood-pulp is made. There is no reason whatever why pulp factories should not spring up in Galway, especially where water-power is available, provided there was a sufficient and steady yield of Spruce or Scotch Pine timber. Then, again, there is pit timber, the demand for which is steadily increasing. Last, but not least, there is sufficient evidence to show that the imports of large timber (especially Coniferous timber, equal to 87 per cent. of our total imports) in the future are far more precarious than most people are aware. It is merely a question of a moderate number of years when the United States of America will require every stick which Canada can spare under the present system of working. As it is, they already take half the total exports of timber from Canada. And it is more than doubtful whether the countries around the Baltic will be able to keep up their present exports of timber.

Would it not be possible to make the experiment in one county, say, Galway? Could not the Irish Government, when buying and breaking up large estates, constitute as State forests the surplus areas which remain over after the cultivated lands and grazing grounds have been settled with the occupiers? If the afforestation is carried out in a judicious manner, it will yield a fair return on the invested capital, considering that most of the land in question can be acquired for a few shillings an acre. It is, however, essential that the scheme of afforestation should be carefully drawn up and carried through in an economic manner, and not in a haphazard way. Apart from the selection of the right species of trees to be planted, the important point is that the forests should not be created in large out-of-the-way blocks, where special forest labourers would be required, but that they should consist of blocks scattered over the country between the cultivated fields and grazing grounds of the small farmers or proprietors. In that case the man who cultivates a few acres of land can earn some money by working in the forest during winter, when his fields do not require his attention. There will thus be no necessity for a portion of the population going abroad in search of work during part of the year, an expediency of doubtful value. It is far better that these men should have an opportunity of earning some money in their leisure days, and yet be able to reside in their own homes. Afforestation of the surplus lands can do this, without a financial loss on the part of the country. W. Schlich, *Cooper's Hill, March 15.*

The
 Horticultural
 Club.

At the monthly dinner of this Club on Tuesday, the 8th, at the Hotel Windsor, Dr. HENRY, of Chinese flora fame, was the guest of the evening. Mr. HARRY VEITCH occupied the chair in the unavoidable absence of Sir JOHN LLEWELYN, and some forty

members and visitors were present. Sir TREVOR LAWRENCE, Sir W. T. THISELTON-DYER, and the Rev. W. WILKS represented the horticultural and botanical interests in conjunction with many others of note. A capital programme of vocal and instrumental music served to enhance the attractions of the evening, though as it turned out, the eloquence of the speeches generally, and particularly the interesting nature of that of Dr. HENRY, would have amply repaid attendance. The usual loyal toasts having been proposed by the chairman, followed by that of the Royal Horticultural Society, which elicited many renewed expressions of approval of the Hall scheme.

Sir Wm. T. THISELTON DYER proposed the health of Dr. HENRY in a capital speech which evoked considerable amusement by its quaint combination of dry official reserve and genial appreciation of Dr. HENRY's labours, the extent of which may be gathered from the fact that his contributions of specimens, not merely to British collections, but also to foreign ones, number many thousands, and embrace an enormous number of valuable plants.

Dr. HENRY in his reply undoubtedly made the speech of the evening. In his allusions to the extreme richness of the Chinese flora as exemplified by the contributions aforesaid, he pointed out that there still remained an enormous area to be explored, two virgin provinces alone exceeding in area France and Germany put together. He also pointed out that when he went thither, his previous Oxford education left him utterly ignorant of anything useful, an extensive knowledge of ancient Greece, subsequently upset by the discovery of its fallacious basis, being of no aid to him whatever. Hence he modestly argued that he had been the wrong man entirely for the task, and that when an expedition was fitted out, as he hoped might be done perhaps under the auspices of the Royal Horticultural Society itself, its members should be fully qualified men, who would not, as he did at the outset, regard *Primula obconica* as simply a troublesome weed because it was so abundant, leaving it to be sent over by someone else to constitute a chief attraction at our floral shows. That such an expedition would pay, Dr. HENRY argued from the fact that not merely were there innumerable valuable flowering plants undoubtedly waiting to be found, but that the Chinese cultivated many sorts of vegetables unknown to us, many fruits existed, also un introduced, and even forage-grasses grew there which he considered worthy of introduction. Chinese methods of culture also should be studied by the expedition, since they managed in some favoured spots to raise seven crops in a season. Further, the climatal conditions of much of the area in question were such that the plants found should be hardy in these islands. Dr. HENRY cited numerous species there existing, *Ribes*, *Rhododendrons*, &c., which would excel anything yet introduced. Finally, he expressed the belief that by such study of agricultural methods, and introduction of new material, the home agricultural question might be solved, and our rural population re-established by the utilisation of the vast areas of waste land—a consummation devoutly to be wished for in the interests of the home countries, which would thus be less dependent on outside sources for its food supplies.

On the conclusion of Dr. HENRY's interesting speech, Sir TREVOR LAWRENCE handed him the VEITCH Memorial Medal, and it was felt by all present that it could not have been bestowed upon a more worthy recipient.

Other toasts followed, concluding with the health of the Chairman, which closed a highly interesting and practical meeting.

CASSIA CORYMBOSA AT TREGYE, CORNWALL (Supplementary Illustration).—The genus *Cassia* belongs to Leguminosæ, and numbers about 200 species, natives of tropical and warm temperate climates, but few of which are cultivated in this country. The flowers are yellow, leaves pinnate, leaflets opposite, and petioles usually glandular. Very few representatives of the genus exist in private gardens in this country, and *C. corymbosa* is but seldom met with, although it makes a showy subject for the greenhouse, being equally at home growing in a border, as a wall-plant, or in a pot or tub; and the cultivation of this and other species presents no difficulties. In the mild south-west counties of England, Ireland, and Scotland, *C. corymbosa* forms a most effective plant for planting against a sunny wall, or in a sheltered nook where plenty of sunshine can reach it. That this species grows into a grand specimen and an object of great beauty, in such situations, is evident from our illustration, which represents a plant of *C. corymbosa* growing in the gardens of the Hon. JOHN BOSCAWEN, at Tregye, Perranwell, Cornwall. The plant is but eight years old, and was raised from a cutting taken from a plant growing in Mr. PENDARVES VIVIAN'S garden, Bosahan, in the same county. It flowers in August, and in the winter loses all, or nearly all, its leaves. *C. corymbosa* is a native of Buenos Ayres.

LINNEAN SOCIETY.—On the occasion of the evening meeting, to be held on Thursday, April 17, 1902, at 8 P.M., the following papers will be read:—1, "The Anatomy of *Todea*, with Notes on the Affinity and Geological History of the *Osmundaceæ*," by Professor A. C. SEWARD, F.R.S., F.L.S., and Miss SYBIL O. FORD; 2, "On the New Zealand Phyllobranchiate *Crustacea*—*Macrura*," by G. M. THOMSON, F.L.S., &c.

THE SURVEYORS' INSTITUTION.—The next ordinary general meeting will be held in the lecture hall of the Institution, on Monday, April 14, when a paper will be read by Mr. C. H. HOOPER (Fellow), entitled "Compensation for Fruit-planting." The chair will be taken at 8 o'clock. It has been decided, on the invitation of the Cambridge, Huntingdon, Norfolk, and Suffolk Provincial Committee, to hold the next country meeting at Cambridge on May 22 and 23. The morning of the first day will be devoted to papers and discussions, and the afternoon to an inspection of the Colleges and University buildings, and to a visit to Ely, with a dinner in the evening; the second day to excursions to Sandringham, by gracious permission of His Majesty the King; and to Cheveley, by kind invitation of Col. McCalmont, M.P. Full particulars will be issued later on.

"ICONES SELECTÆ HORTI THENENSIS."—Two parts of this useful publication are before us. The object is to illustrate and describe the plants cultivated in the garden of M. VAN DEN BOSSCHE at Tirlemont. The illustrations are excellent, and comprise the details most needed by the botanical student. The descriptions are drawn up with much care and

accuracy by M. DE WILDEMAN. Among the plants specially interesting to horticulturists mentioned in the present parts are *Limnanthes Douglasii*, *Morina longifolia*, and *Nerine undulata*.

"THE LAND ROLL."—We would remind our readers that our contemporary, *The Land Roll* (published by Messrs. DOWSETT, KNIGHT & Co., 3, Lincoln's Inn Fields), is interesting to all concerned with such matters as are suggested by the title. The articles deal with archæology, value of land for building and cultivation—in fact, with every such subject viewed from a general and from a commercial standpoint.

BOTANIC GARDENS, MALTA.—We have received a copy of the seed catalogue of this garden. The catalogue is carefully compiled, conveniently arranged, and has a copious alphabetical index. It is not often that we meet with a catalogue so well arranged. The Director of the garden is Dr. DEBONO, Floriana, Malta.

NONEX.—A small tin of this cement has been sent to us for trial. Having used it on brickwork, as well as on stonework, to fill up cracks, stop up mouse-holes, and to fasten a metal shelter to a wall, we are enabled to report very favourably on it, and think it likely to be very useful to amateurs and householders generally.

"FLORA OF TROPICAL AFRICA."—We are glad to announce the publication of a part of this important work, containing the remainder of the *Cyperaceæ* monographed by Mr. CLARKE. This part concludes the eighth volume. A preface by the Editor, Sir WILLIAM THISELTON DYER, and a copious index, add to the value of the volume. The grasses will be included in a separate volume. It is intended to proceed at once with the printing of the fourth volume, comprising the *Poeynaceæ*, an order of great economic interest, as comprising so many plants yielding escautcheou.

LEGACY TO A BOTANIC GARDEN.—The late Mrs. STEPHEN WILSON, of North Kilmundy, Aberdeenshire, has left by her will, in addition to other legacies to Aberdeen charities, her estate of North Kilmundy to the trustees of the Cruickshank Botanic Garden, Aberdeen, to be held by them for purposes similar to those for which they hold the gardens, or for supplying facilities for the study of forestry, or any kindred subject. An idea of what this bequest means to the Cruickshank Garden will be better understood when it is stated that the rent-roll of North Kilmundy is of the annual value of £512 12s. 5d.

ALTERATION OF DATE.—We are informed by Mr. SYDENHAM that the forthcoming show of the Midland Daffodil Society will be held on April 24 and 25, not on April 30 and May 1 as previously announced.

GIGANTIC ROOTS.—It has often been pointed out that the mammoth roots exhibited at agricultural shows are fallacious guides as to quality, the excessive size being mainly due to a disproportionate accumulation of water. M. DEHÉRAIN has lately shown that in the case of Sugar-Beet, although in the smaller roots the total yield per hectare is less, the weight of dry matter is greater, and the loss of nitrates diminished.

THE LATE SIR JOHN B. LAWES, BART.—A large and handsome brass memorial tablet has been erected in the parish church of Harpenden in memory of the late Sir JOHN LAWES. The tablet bears the armorial crest

of the LAWES' family, with the motto "Pour la foi," and the following inscription:—"In affectionate memory of Sir JOHN BENNET LAWES, Baronet, F.R.S., only son of JOHN BENNET LAWES. Born at Rothamsted, Dec. 28, 1814; died at Rothamsted, August 31, 1900. His long life and his great knowledge were to the last devoted to far-reaching investigations into all scientific matters which could affect agriculture. The results obtained were freely given for the benefit of his fellow men, both in his own country and all parts of the world. This tablet is erected by parishioners of Harpenden and others, who deeply feel his loss, as an example and a friend."

THE FORTHCOMING "NATURE STUDY" EXHIBITION.—The scheme for a "Nature-study" exhibition, which we mentioned in our issue of March 1, has now assumed a definite shape, and the show will be held at the Gardens of the Royal Botanic Society from July 23 onwards. Produce will be admitted as showing the results of practical instruction in horticulture; but the bulk of the exhibits will probably be more strictly educational. It is hoped to promote and make public all kinds of teaching in which the study of Nature around us comes into play; therefore the systems of professedly agricultural and horticultural establishments will be as welcome as the experience of the elementary schoolmaster or the recorded observations of his village children, who, following the advice of the Board of Education, have begun to take lessons from Nature out-of-doors. The executive committee, of which Sir JOHN COCKBURN is chairman, and Mr. J. C. MEDD secretary, have given a list of exhibits, which are merely suggestive, in a circular which is being issued. It is carefully pointed out also that these are not to be taken as defining the scope and objects of "Nature-study" teaching. Such definition is, however, very badly wanted, and educationalists will look with interest to the decisions of the judges, and the report of the executive committee upon the exhibition, as possibly solving a difficult problem. A momentary glance at the aforesaid circular will show how much of further interest to horticulturists will be included in the exhibition. Plans of school-gardens in elementary and continuation schools, models and diagrams illustrating operations in gardening, collections showing the habits of plants, specimens of injurious and useful insects, as well as of troublesome weeds, together with examples of what horticultural societies are doing to interest people in the world of life.

ROYAL GARDENS, KEW.—Applicants for situations as gardeners should apply to the Curator, Mr. W. WATSON, Royal Gardens, Kew.

VIOLETS AND G. F. WILSON.—In the Violet trade in France no one orders Violets but "Wilson's" (*Violettes à longue tige*, dites Wilson's). Are these Violets in any way connected with our old friend?

A PLANTATION OF *ELÆAGNUS REFLEXA*.—A recent number of the *Revue Horticole* contains some notes by M. ED. ANDRÉ about the park at Blandos, between Bayonne and Pau. There, in the grounds, which belong to M. BASTERRECHE, is an avenue of *Elæagnus reflexa*, close to the public road. There are eleven of the shrubs, each at the foot of an old Oak, of which it climbs the trunk, and extends to the branches, climbing up 50 feet, and forming overgreen clusters 18 feet across. Several of these huge climbers have stems 30 inches in circumference at the base. There are many branches reddish-brown, with handsome Laurel-shaped leaves, green above,

golden-red, dotted with bronze beneath. In October open many small white tubular flowers speckled with red, and scented with clove. *Elæagnus reflexa* differs from *E. pungens* of Thunberg, at least in a horticultural sense, by being less shrubby, and its climbing branches form a tall climber.

"HANDBOOK TO MINEHEAD."—We have frequently had occasion to mention the *Home-land Handbooks* (published by the *Homeland Association*, 24, Bride Lane, Fleet Street, E.C.), and our readers will therefore know what to expect in Vol. 18 of the series, that deals with Minehead, Porlock, and Dunster. It is written by C. E. LARTER, and illustrated from drawings and photographs. These guides should be acceptable to those visiting the neighbourhoods of which they treat, as they deal intelligently with the towns and their environs, and with the stag hunts and other sports of the districts.

THE SWANLEY HORTICULTURAL COLLEGE.—We have before us the Report for 1901 of the Swanley Horticultural College. Many improvements have been made, and the "Botanical Garden" has been enlarged. Many of the students have obtained appointments as gardeners, and many others have entered for botanical and horticultural examinations with great success. The work of the year is, therefore, highly satisfactory, and further improvements and enlargements are now in contemplation.

THE SCILLY ISLANDS.—H.M. the KING has recently paid a visit to Tresee, where he inspected the gardens of Mr. DORRIEN-SMITH and the flower-farms of the island.

METROPOLITAN PUBLIC GARDENS ASSOCIATION.—The nineteenth annual report (for 1901) of this Association is now before us, and includes details of the successful undertakings of the year. "As London grows, so the opportunities for the Association's work extend, and a watchful eye is still required in order to protect valuable breathing spaces." The pamphlet gives an account of funds received, and suggests that further donations would be of use in assisting the Association in its valuable work of encouraging, in every possible way, the preservation of existing open spaces and the acquisition of new ones; assisting in beautifying the streets and giving health, as well as pleasure, to the dwellers in our crowded metropolis and its suburbs.

SWALLOWS.—I saw a swallow feeding, strong on the wing, near Shepperton on April 3, the earliest I have ever noted. D.

HORTICULTURAL TEACHING BY THE MIDDLESEX COUNTY COUNCIL.—We learn that the County Council of Middlesex has made arrangements for lectures for teachers in horticulture and practical gardening. These lectures will be given in the Middlesex County School of Horticulture, Pymmes Park, Edmon-ton (adjoining Silver Street station, G.E.R.), by Mr. J. WEATHERS, and commence on Saturday, April 12. The instruction will include a general survey of cultivated plants, their habits, and character; the functions of their parts; their propagation, germination, &c.; also a study of soils, manures, and insect enemies. These classes are free to teachers, and, under certain conditions, the Technical Education Committee will pay part of the railway fares of those attending. Application for particulars must be made to Mr. B. S. GOTT, The Guildhall, Westminster, S.W.

EUSTON HALL.—The destruction by fire of a considerable portion of the Duke of GRAFTON'S mansion near Thetford is announced.

STOCK-TAKING: MARCH.—The Board of Trade Returns for the month of March present a very dreary appearance. The decrease in imports noted amounts to £5,528,195, the total for the month being £40,897,861, compared with £46,426,056 for the same period last year. A glance at the figures in the accompanying table will show in what the decrease consists—the deficit in articles of food; both sections tell a tale in which perhaps the Chancellor of the Exchequer has something to say; but ours not to reason why—here. Perhaps it may be suggested that the early Easter Holidays destroyed the symmetry of the returns, even causing the heavy drop in the timber imports. The figures above noted are as follows:—

| IMPORTS. | 1901. | 1902. | Difference. |
|--|------------|------------|-------------|
| | £ | £ | £ |
| Total value ... | 46,426,056 | 40,897,861 | —5,528,195 |
| (A.) Articles of food and drink—duty free ... | 13,366,807 | 11,575,732 | —1,791,075 |
| (B.) Articles of food & drink—dutiable ... | 5,533,602 | 3,866,048 | —1,667,554 |
| Raw materials for textile manufactures ... | 7,830,883 | 6,724,952 | —1,105,931 |
| Raw materials for sundry industries and manufactures ... | 3,948,609 | 3,431,397 | —517,212 |
| (A.) Miscellaneous articles ... | 1,669,042 | 1,980,032 | +310,990 |
| (B.) Parcel Post ... | 207,754 | 120,195 | —87,559 |

In the trade of the past three months there is a gain of some £572,818 compared with the same period last year, the figures being £132,694,250, as against £132,121,432. We come now to the imports of fruit, &c., concerning which we have the following figures:—

| IMPORTS. | 1901. | 1902. | Difference. |
|---|---------|---------|-------------|
| | Cwt. | Cwt. | Cwt. |
| Fruits, raw:— | | | |
| Apples ... | 155,840 | 115,804 | —40,036 |
| Apricots and Peaches ... | 146 | 40 | —106 |
| Bananas... bunches ... | 126,849 | 168,703 | +41,854 |
| Grapes ... | 1,514 | 948 | —566 |
| Lemons... .. | 71,284 | 71,901 | +617 |
| Nuts—Almonds ... | 4,569 | 6,163 | +1,594 |
| Others, used as food ... | 41,629 | 59,186 | +17,557 |
| Oranges... .. | 747,923 | 923,939 | +176,016 |
| Pears ... | 2,015 | 715 | —1,300 |
| Plums ... | 127 | 50 | —77 |
| Strawberries ... | 5 | 1 | —4 |
| Unenumerated, raw... .. | 3,980 | 5,187 | +1,207 |
| Fruits, dried— | | | |
| Currants, for home consumption ... | 32,164 | 46,541 | +14,377 |
| Raisins .. | 16,498 | 15,981 | —517 |
| Vegetables, raw:— | | | |
| Onionsbush. | 529,961 | 411,121 | —118,840 |
| Potatoescwt. | 741,903 | 209,468 | —532,435 |
| Tomatoes... .. | 49,576 | 35,060 | —14,516 |
| Vegetables, raw, un-enumerated ...value | £41,319 | £59,781 | +£18,462 |

There are some charges made against the handlers here of West Indian Oranges, &c., but possibly they are based on some misunderstanding; at any rate, let us have a fair field and no favour in the disposal of fruits from our Colonies. The—

EXPORTS

for the month of March show up on the wrong side. The value of the month's trade is £22,217,238 as compared with £25,021,293 for the corresponding period last year—or a decrease of £2,804,055. But the item of £2,167,225 decrease on new ships goes far to account for this falling off. The figures for the past three months are £67,798,688, as compared with £70,812,279—a loss of £3,013,591. Possibly

proceedings at St. Stephen's may tend to the amelioration of the present condition of things as delineated in the *Trade and Navigation Returns*.

MR. MARTIN SUTTON.—The daily papers announce the intention of Mr. MARTIN SUTTON to present to the town of Reading a statue of H.M. the KING, as a memorial of the Coronation.

THE NATIONAL CHRYSANTHEMUM SOCIETY'S Report for 1901, and schedule of prizes to be offered for competition at the exhibitions to be held during the present year, has just been issued. The gist of that report and balance-sheet was published in these pages on Feb. 8 last. The dates for the Society's shows are October 7, 8, and 9; November 4, 5, and 6; and December 2, 3, and 4. They will be held as usual in the Royal Aquarium, Westminster. The most important competition at the November show again promises to be in the class for sixty blooms of twelve varieties, to be shown in vases. As much as £50 is offered in this class alone, and we are glad that such liberal encouragement of this more natural system of displaying the blooms is to be continued. In other respects, and excepting a few modifications, the schedule is much the same as that of last year, and there are again many valuable special prizes, including that offered by the President, Sir A. K. ROLLITT, M.P., for the best group of plants. There does not appear to be any special instructions to the judges at the December exhibition to encourage the exhibition of freshly-opened flowers of moderate size rather than of retarded specimens of the biggest bloomed varieties, that naturally would be out of season at that date. But we believe it to be very generally thought, that this late exhibition should be made the means of developing a race of naturally late blooming Chrysanthemums to a greater degree than at present is the case. The results of the work of the Classification, Floral, and other Committees are given, and are interesting to those who cultivate their Chrysanthemums partly or wholly with a view to exhibiting them.

MR. F. J. COPPIN.—For upwards of twenty years, writes a correspondent, Mr. F. J. COPPIN, has held the rank of Superintendent in the London parks, and for a long period he has been in charge of Battersea Park. When it was resolved by the London County Council to create a new office, and give Lieut.-Col. SEXBY a right-hand man, Mr. COPPIN, as senior superintendent was chosen for the position. The step was forced upon the Council by the continued growth of the area of parks, commons, and open spaces, the Chief Officer finding it well nigh impossible to keep them under direct supervision.

THE NURSERYMEN, MARKET GARDENERS', AND GENERAL HAILSTORM INSURANCE CORPORATION, LTD., will hold its annual meeting on the 11th inst., at 41 and 42, King Street, Covent Garden, London.

PRESENTATION TO A GARDENER.—The local members of the trade and the gardeners in the Windsor district, together with some friends from a distance, met at the Castle Hotel, Windsor, on the 26th ult. to make a presentation to Mr. JAMES MCILWRICK, who, after a service of twenty-eight years, has retired from the post of head gardener to Mr. V. B. and Lady EMILY VAN DER WEYER, New Lodge, Windsor. Mr. MCILWRICK was entertained at a complimentary dinner, presided over by Mr. HARRY TURNER, Royal Nursery, Slough, who in the course of the evening presented to Mr. MCILWRICK an illuminated address and a purse

containing twenty-five pounds in gold. The address expressed the regret with which the gardening community had learned of Mr. McILWRICK'S retirement from New Lodge, and bore testimony to the excellent work done by the recipient in encouraging rural district flower shows, and in other ways. A very enjoyable evening was spent.

THE LATE MR. CHARLES FISHER.

THE death of this famous nurseryman, recorded in your issue of Saturday week, leaves one more void in the decreasing few of the great gardeners of the last century. Friend and contemporary of such men as the late

lost his interest in gardening, and it was only a little before Christmas that I received from him a long and interesting letter on his garden and its contents.

In a knowledge of hardy trees and shrubs, Mr. Fisher at his prime had few equals. Of evergreens, more especially Hollies, he made a special study, and a series of various fine-leaved forms bear record of his success in raising novelties. *Ilex Fisheri*, *Handsworthensis*, *Handsworth Silver*, *Foxi*, and the recently distributed novelties of the firm, *Wilsoni* and *Mundyi* were amongst his productions.

As to *Berberis stenophylla* (first called *Handsworthensis*), I remember his taking me to see

the same experience, and I may note amongst these Mr. Nicholson of Kew, Mr. Jeffries of Cirencester, the late Mr. John Warner of Leicester, Mr. Roupell of Peter Smith & Co., of Hamburg, one of the first authorities on Coniferae in Germany, and many others.

Mr. Fisher was of commanding presence, standing some 6 feet 3 inches high, and of great physical development. A fine type of the clear, common-sense Yorkshireman; and speaking of him after a continuous friendship of nearly fifty years, I may say that he was a man whom it was an honour and a distinct advantage to have known intimately.

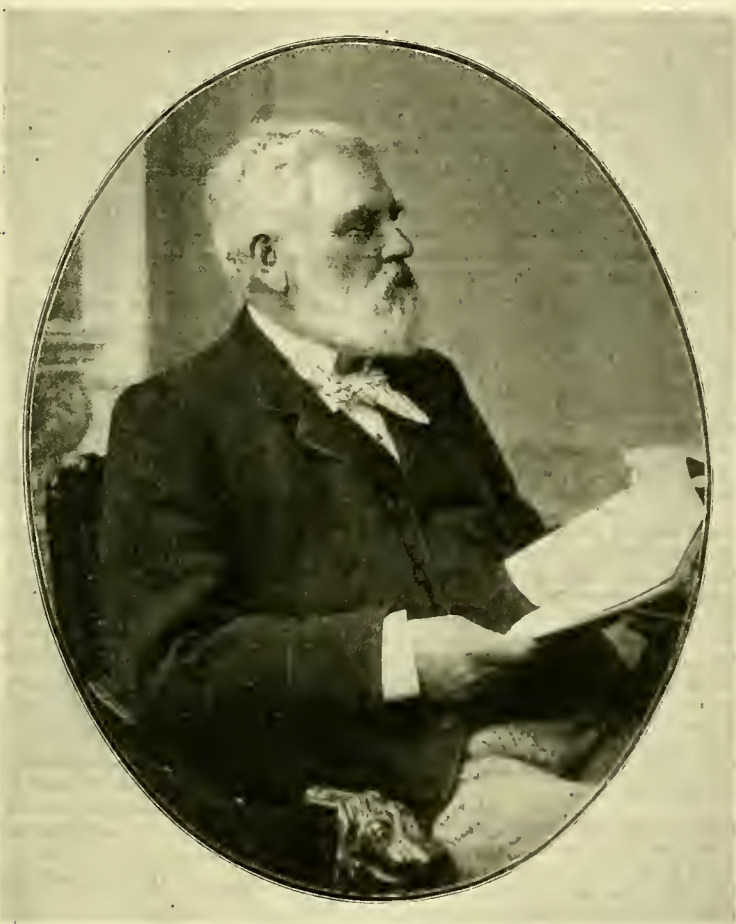
He was laid to rest in the Handsworth churchyard on Monday, 24th ult., amidst marks of respect on the part of many, some of them lifelong, neighbours. *George Paul.*

HOME CORRESPONDENCE.

WALLFLOWERS.—I have heard numerous complaints as to the injury done to common Wallflowers during February by the sharp frosts of that month. I have seen evidences of the mischief done also. At Hampton Court the Wallflowers are remarkably fresh and vigorous, not a leaf seeming to have been harmed. That immunity is doubtless due to the care taken early in the winter to fix branches of Yew in and amongst the plants in the numerous beds there. Now these are removed, and the plants are fully exposed, the benefits of such protection can be seen. That such form of protection was furnished indicates that the gardeners there expected harm to their plants would ensue, were not such wind or frost breaks provided. There is the possibility that fogs do as much harm as frosts, but these pestilent visitations do not extend in their most virulent form to Hampton Court. But it is hardly likely that branches of Yew would protect plants in the open from the evil effects of London fogs. *A. D.*

AN ASIA MINOR SNOWDROP.—Mr. Siehe, of Mersina, sent me last autumn a Snowdrop, which, from the markings on the inner segments, as well as from its general habit, he believed to be a new species; it also flowers earlier than the ordinary *Elwesii*. I sent the flowers to Kew this spring, and the judgment was that the plant is not a new species, and cannot be specifically distinguished from *Elwesii*. As a garden plant, however, from its earliness, and from its habit, it is sufficiently distinct to be worth having. It seems to me to be identical with a form of *Galanthus* which Mr. Whittall kindly sent me some few years back gathered at Cassaba. *M. Foster, Shelford.*

A GUM-TREE (EUCALYPTUS) BLOOMING IN MARCH AT CROMLA, CORRIE, ISLE OF ARRAN.—This winter has been severe. At Kilmarnock, Ayrshire, 7 miles from the sea, the thermometer fell on February 24 to 8° (24 of frost). Many plants suffered, *Veronica Traversii* being killed, though the tall, dark, bright-leaved *V. anomala*, if that be the correct name, was uninjured. On March 31 I crossed to Arran to see what my plants at Corrie were like. I confess to a surprise, for they were all uninjured. I was especially pleased to find that the Tree Fern (*Dicksonia antarctica*), as also a little plant of *Acacia deurens* (Black Wattle), which I had planted last year was untouched. It was also interesting to find that the plant of *Desfontainia spinosa* had still a few flowers expanded, and that *Camellia Donckelari* was in bloom, and the double-flowered white *Camellia*—alas! it has changed to a double red—was showing its petals, as was the case with *Rhododendron arborescens*; while *R. Gibsoni* and *R. virginale* were covered with flower-buds, and *R. Falconeri* was in good health—largest leaf 15 in. by 7½, exclusive of stalk; and it need not be added the three species of Palms, and the great Palm-Lily (*Corypha Veitchii*), brought from Can-



THE LATE MR. CHARLES FISHER.

Robert Marnock, James Veitch, Arthur Dickson, Robert Parker, B. S. Williams, and Bruce Findlay, Mr. Fisher seemed, in his retirement, a link with the preceding generation.

Born on May 19, 1823, at Handsworth, he succeeded to the headship of the firm founded by his great grandfather at Handsworth, on the retirement of Messrs. Fisher (his father), Holmes & Foster, in the early fifties; carrying on the business with the late Mr. Ed. Holmes (afterwards of Lichfield) as Fisher, Holmes & Co. until 1868, when Mr. Holmes retired, being succeeded by his son-in-law, Mr. Sibray, when the firm became Fisher, Son & Sibray.

When in 1888 a private company was formed under the same title, Mr. Fisher remained a director, taking however a decreasingly active part in the management, until he eventually disposed of his interest two years ago. Though retired from active work, Mr. Fisher never

the original plant, and a double form was also selected by him.

Rhododendrons, including some charming varieties of *campanulatum*, still cultivated; early varieties, such as *Handsworth Early White* and *Scarlet*, as well as hybrid *Catawbiense* varieties, such as *Countess Fitzwilliam* and others, were his gains in this group. In greenhouse Rhododendrons, Mr. Fisher took especial interest, raising the finest of the white, sweet-scented varieties, *Lady Alice Fitzwilliam*.

Of choice hardy trees and shrubs, Mr. Fisher produced many varieties, interesting in flower and foliage.

As a pupil of his in 1858 and 1859, I owe him a debt of gratitude in teaching me to know and love hardy trees and plants, and during my stay at Handsworth, I found in him a kind friend and an efficient teacher. Many others had

terbury, New Zealand, in 1878, and planted at Cromla in the following year, were untouched; as was also that other New Zealand plant, *Mertensiodendron lucida*, and a standard of *Lomatia ferruginea*. It was gratifying to see all these in excellent health; but a surprise awaited me. On going to my collection of Eucalypts—there are nine species—I was astonished to find *Eucalyptus cordata*, which I have named the Silver Gum of Arran, in bloom. It was planted in 1895. I send one of the twigs. It will be noticed that there are only three flowers on each stalk, yet there being a leaf on each side of the stem, and a flowering stalk at each leaf, the flowers so expand as to form a circle around the twig. It will be observed also that the leaves are already expanding. This is a dwarf Gum, in Australia growing only to the height of 50 feet, though it will probably grow considerably higher in Arran. I notice that one bloomed at Castlewellan, Ireland, in 1893; there it bloomed in May, at Arran in March. In reality, I believe it was in bloom all the winter, but I was not in Arran to see it. *David Landsborough, Kilmarnock.*

GLOXINIAS.—I read with interest Mr. Hemsley's article in the *Gardeners' Chronicle* of March 29 on Gloxinias. I cannot quite agree with him that a moist atmosphere does not suit them. Owing to a limited amount of space, the Gloxinias at Holcote are grown in a Cucumber-house until they commence to open their blooms, after which they are placed on the north side of the conservatory. Whilst in the Cucumber-house, the pots stand on the beds, and are constantly syringed; they seem to revel in the treatment, for last year they carried from fifty to sixty well-developed blooms on each plant. The foliage was clean and healthy. *G. H. Westlake, Holcote Gardens, Yeovil.*

LAPAGERIAS FLOWERING IN THE OPEN.—I enclose a few blooms of *Lapageria rosea*, grown in the open in the garden of W. Allhusens, Esq., Pinhay, Lyme Regis, just on the borders of Dorset. Mr. Bloye, the able gardener, has both the red and white varieties doing remarkably well in quite an exposed position. The plants are now (April 4) in full bloom, and throwing up strong growths. *A. E. Townsend.* [The flowers are in every respect equal to those produced indoors. *Ed.*]

EARLY SNOWDROPS.—Your correspondent, W. Miller, Berkswell, says, on p. 213, in your issue for March 29, that I omit to give the date of the flowering of our Snowdrops. If he will be kind enough to look up the *Gardeners' Chronicle* for February 8, p. 98, he will find the dates on which they opened flower here this season and last season. *J. Jeffrey, St. Mary's Isle Gardens, Kirkcudbright.*

MELONS AFTER TRANSIT.—Whether Melons lose their flavour in travelling or not I cannot say, but this I do know, that Melons when they arrive at the Shrewsbury Show have very little flavour in them. When I used to be honoured with a judgeship at Shrewsbury, no department gave me more trouble and misgivings in my own judgment than that of deciding the flavour of some thirty or forty Melons. To retain command of one's tasting capacity is a task more difficult than anyone might imagine. Many of the samples are often so far gone that they should never have been brought. Once I remember a Melon having a decided flavour of "tar." To satisfy myself that I was not mistaken, I called a passing judge to our assistance. He tasted, and instantly gave it as his opinion that the flavour was that of "tar most decidedly." This man passed along and could not be induced to taste any more of them. *W. Miller.*

LILIUM GIGANTEUM.—This Lily used to grow and flower very well at Combe Abbey, Warwickshire, and many specimens thrive and looked very well after themselves when planted out in the shrubberies. Those planted on cultivated borders were slightly covered over in winter with a few Oak leaves, weighted down with something to prevent them being

blown away, but amongst which in spring the leaves and flowering spikes would safely make their appearance. These would again be protected by a few Spruce branches stuck into the ground all round, to be removed when all danger of frost was over. *W. Miller.*

THE SHREWSBURY GRAPE PRIZES.—Like Mr. Kirk and many others, I am glad the long-promised Grape Cup competition is so soon to become a reality, and sincerely hope the scheme will create a monster competition of the very best produce from all parts of the country, that we may see to what high standard of perfection the cultivation of the Grape may be brought. It is also most gratifying to be assured that the cup and the whole of the cash prizes are provided by the enterprising Shropshire Horticultural Society, which we may confidently trust to carry out the scheme in an impartial manner. The only pity is, that the London "season" and the Scottish grouse season do not come on at about the same time, as the southern growers are usually handicapped and put to their wits' ends to meet the heavy requirement of the earlier London season, while the northern growers usually have only to prepare for the August grouse season, and thus possess better opportunities and time for preparing their productions. Moreover, they have the advantage of a longer season of growth. I am rather sorry Mr. Kirk is so uncharitable as to "look a gift horse in the mouth" by complaining of the uselessness of the special 2nd prize of books to head gardeners, because there are plenty of under ones who would be glad to have them. I may also assume that it is not yet too late for any other "special" merchant to step in and supplement any of the minor prizes. And why does Mr. Kirk call the Cup the Queen's Cup? when it is entirely provided by the Committee of the Shropshire Horticultural Society, that we must thank for that and many other generous helps our honourable profession have received. *J. H. Goodacre.*

STERILISATION OF THE SOIL.—In last week's issue of the *Gardeners' Chronicle*, a paragraph appeared referring to the benefits which American Carnation growers have derived through sterilising the soil. We have, in conjunction with a gentleman well known to horticulturists, taken out a provisional patent for an apparatus for soil sterilisation, which will shortly be on the market. In the meantime we shall be pleased to give particulars should any of your readers wish for the information. *William Wood & Son, Ltd., Wood-Green, London, April 8, 1902.*

THE SUCCESSFUL CULTURE OF HARDY FRUIT.—In the issue of the *Gardeners' Chronicle* for March 29, a long letter on fruit culture was published from the pen of A. W. Godwin, which is in many respects so misleading that it ought not to be allowed to pass without notice. In his list of Apples he states that King of Pippins is "unequaled as a dessert fruit." But I do not think many gardeners will differ from me if I say that, but for its appearance it would be almost unknown, being of very poor quality. And after giving a list of Apples, many of which are scarcely known, and from which the best late varieties are omitted, he states that this list embraces every Apple necessary to be grown. He then gives a list of late Pears, in which he places Louise Bonne of Jersey and Citron des Carmes, which needs no comment from me, except for the benefit of the ignorant planter who may be led to purchase such varieties for late use, and find them gone by November. *Edmund D'Olier, Knocklin, Bray, Ireland.*

ENQUIRIES.

WHAT, if any grounds, are there for the statement that Mushrooms cease to grow when the moon is about the full? *E. Kent.*

CAN you give me the names of any flowers having two distinct scents, which are given off at different times, and which would be easy of access or of cultivation for purposes of observation? *Tilia.*

ODONTOGLOSSUM × ADRIANÆ

"MRS. ROBERT BENSON."

OUR illustration (fig. 78) represents a flower of this fine natural hybrid of *O. crispum* and *O. Humei*, for which Captain Holford of Westonbirt, Tetbury (gr., Mr. Alexander), received a First-class Certificate at the Royal Horticultural Society on March 25, it having previously received an Award of Merit when flowered on the fresh imported plant, Feb. 26, 1901. The plant as last shown, well exemplified the good resulting from careful cultivation, both plant and flower having greatly improved. The finely formed flowers are cream-white, the markings reddish-brown. Crest of the lip yellow.

Obituary.

WALTER FURZE.—This gentleman, who was a resident at Teddington, a F.R.H.S., and well known in his district as an ardent amateur horticulturist, came to an untimely end at Bournemouth on March 31, where he was temporarily residing, having been thrown from his horse near Darley Chine on the 22nd ult. The animal also kicked him on the head and rendered him unconscious, and in spite of what seemed to be a successful operation, he succumbed on the date named.

Formerly devoted to the culture of the Chrysanthemum, and being often a successful competitor, and once carrying off two years in succession the then popular Kingston Challenge Vase, Mr. Furze later became an enthusiastic orchidist, and was at one time an active member of the Orchid Committee of the Royal Horticultural Society. His health had not been good for some time, hence his comparative retirement from active life.

JOHN DOWNES.—We regret to announce the death of Mr. John Downes, head gardener at Berkswell Hall, Warwickshire, on Saturday, March 29, from heart failure following influenza. He was fifty-nine years of age, and had been gardener to J. H. Wheatley, Esq., for many years. He was greatly respected in the district, and enjoyed a high reputation among the gardening fraternity. It was, however, as an authority on Chrysanthemums that Mr. Downes was probably best known, and for over twenty years he was one of the judges at the Birmingham Chrysanthemum Exhibition. The deceased leaves a widow, one son and three daughters, the son unfortunately being blind.

WILLIAM TROUGHTON.—We regret to have to record the death from paralysis of Mr. Troughton, a well known seedsman and florist, at Preston, having nurseries at Walton-le-Dale, Lancashire. Death occurred on the 7th inst., the day succeeding Mr. Troughton's sixty-fourth anniversary of his birth. The following particulars are extracted from the *Lancashire Daily Post*:—

"Coming to Preston from Cumberland in 1851, he commenced business in 1863. When the Pleasure Gardens were taken over by a company Mr. Troughton was manager, and when they ceased business he took the place himself. For many years past Mr. Troughton has been established at the Walton Nurseries and in Church Street, this business, it is stated, having been founded a century ago by Mr. James Cookson, and passing through various hands into those of Mr. Troughton. Deceased was a Fellow of the Royal Horticultural Society. Ferns were his speciality, and he had over a thousand British varieties. Many years ago he was secretary of the Preston Horticultural Society, and on the retirement

of Mr. C. Parker a couple of years since he was persuaded to take over the secretaryship of the Preston and Fulwood Society, organising the excellent summer exhibition last year. Deceased leaves a son and three daughters."

ROBERT MENZIES DEWAR.—We regret to record the death on April 5, at the age of seventy-four years, of Mr. Robert Dewar, head gardener at Dunnikier, Kirkealdy, Fifeshire. The deceased was born at Aberfeldy, and when he was quite young his parents removed to Liston, in Haddingtonshire, where he received his early training and education. He afterwards returned to Castle Menzies, where he served his apprenticeship as gardener. After spending a few years in various parts of the country, gaining experience and knowledge, he finally settled as head gardener at Dunnikier, now well-nigh fifty years ago.



FIG. 78.—*ODONTOGLOSSUM ADRIANÆ* "MRS. ROBERT BENSON."

Mr. Dewar was a man of rare intelligence, with that quiet, calm, and unassuming manner often associated with those who are much in communion with Nature. His eminence in his profession, and the sterling probity of his character, made his advice and judgment highly valued and esteemed; hence it is that he was so much in request as a judge by floral and horticultural societies. He is survived by his wife and a large family.

PUBLICATIONS RECEIVED.—*Transactions of the English Arboricultural Society*, vol. v., part 1, compiled by John Davidson (1901-1902). Contents: Reports of the Annual Meetings; Making and Cost of Roads and Bridges to carry 10 to 15 tons, by Mr. Jos. Price; Timbers, by Mr. Arthur Deane (with beautiful illustrations of sections, showing the "grain" of various woods); Arboreal Tunnellers, by Mr. Mesley; Canker of Oak, by Prof. Potter; Forest Management in France, by Prof. Fisher, &c.—*Transactions of the Royal Scottish Arboricultural Society*, vol. xvi., part 3; Lieut.-Colonel F. Bailey, Hon. Editor. The contents include papers on Forestry Exhibition at Paris and its Lessons, by J. Gamble; Outlook of the World's Timber Supply, by Dr. W. Schlich (a most important paper); Arboricultural Adornment of Towns, by R. Munro Ferguson; Notes on Tree-seed Testing, by J. Rafn, of Copenhagen; Forestry in Kent and Sussex, by D. A. Glen, and similar subjects.

SOCIETIES.

ROYAL HORTICULTURAL.

APRIL 8.—The usual fortnightly meeting of the committees on Tuesday last, in the Drill Hall, Buckingham Gate, Westminster, was accompanied by an exceedingly large exhibition. During the spring months the displays made at these meetings for several years past have been greater than could conveniently be accommodated in the Hall, and now that the number of Fellows is increasing so rapidly, the difficulties are felt more acutely, because there are very many more visitors than was formerly the case. On Tuesday last the crowding between the tables caused annoyance to everyone. Such a condition of things makes the duties belonging to the Press even more arduous than they would otherwise be.

Orchids were finely represented, but only one First-class Certificate and four Awards of Merit were recommended, being less than half of the extraordinary number recommended on the previous occasion.

flowers with a deep fringe, which was cream-coloured. Another was pure white, with canary-yellow at the base of the segments (Silver-gilt Flora Medal).

Zonal Pelargonium flowers from Messrs. H. CANNELL & SONS, Swanley, Kent, were brilliant, and of the largest size and best form. Very conspicuous were such varieties as Chaucer, rich salmon-pink; Lord Curzon, purple and scarlet; The Sirdar, pure scarlet; Lady Sarah Wilson, white, shaded with salmon-red, especially towards the margin of the petals; St. Cecilia, rich pink; Lilacina Improved, Niagara, white, &c. Half a dozen plants also were shown of the "Cactus" strain of Cineraria, figured in the *Gardeners' Chronicle*, May 11, 1901, p. 297. The florets are rolled inwards longitudinally. The only colour shown was rich purple (Silver Flora Medal).

A group of fine Clivias in flower from H. LITTLE, Esq., Baronhalt, The Barons, East Twickenham (gr., Mr. J. Watts), was recommended a Silver Banksian Medal. The group contained upwards of two dozen specimens of this plant, that better perhaps than any other succeeds in the most urban districts, and needs but little attention.

Camellias as cut flowers from the open ground were shown by Sir FRANCIS T. BARRY, Bart., M.P., St. Leonard's Hill, Windsor (gr., Mr. Robert Brown). The plants from which the flowers were cut have been growing "without protection of any kind" for from three to nineteen years. The flowers and foliage were fresh-looking, and quite unaffected by bad weather (Silver Banksian Medal).

Mr. CHARLES TURNER, Royal Nurseries, Slough, exhibited plants of *Deutzia gracilis robusta*, D. g. rosea, palely tinted with rose colour; and *D. Lemcoinei*. *Hemanthus Diadema* was shown by the Marquis of LONDONDERRY, K.G., Wynyard Park, Stockton-on-Tees (gr., Mr. H. E. Gribble).

Flowering sprays of the rather rare *Bignonia Tweediana* (yellow) and of *Cantua dependens*, were shown by Mr. R. I. LYNCH, Cambridge Botanic Gardens (Vote of Thanks).

Messrs. GEO. JACKMAN & SON, Woking Nursery, Surrey, exhibited alpine and other plants very effectively arranged in boxes: *Gentiana acaulis*, *Primula marginata*, *P. frondosa*, *P. japonica*, *Androsace sarmentosa*, &c. Bigger plants included a dozen specimens of *Incarvillea Delavayi* in flower, and a grand lot of *Cypripedium spectabile* (Silver Flora Medal).

Messrs. WALLACE & CO., Kilnfield Gardens, Colchester, exhibited a group of hardy plants, including excellent specimens of *Iris orchoides*, *I. o. cerulea*, *I. Willmettiana*, &c.; also *Fritillaria Whittalli*, *F. pallidiflora*, &c.; and the brilliant *Tulipa Greigii* (Bronze Flora Medal).

Mr. THOS. S. WARE, Ltd., Hale Farm Nurseries, Feltham, exhibited a group containing several plants in flower of *Incarvillea Delavayi*, *Ramondia Nathalia* (earlier flowering than *R. pyrenaica*), *Silene virginica*, *Lithospermum canescens*, a fine lot of *Shortia galatelifolia*, *Primula Sieboldi* varieties, &c. (Bronze Banksian Medal).

Mr. AMOS PERRY, Hardy Plant Farm, Winchmore Hill, London, N., showed a group of hardy plants, including tall-growing varieties of *Iris punilla*, 5 inches high, among these were Princess Louise, of very pretty blue colour; Harlequin, Beauty, &c. *Primulas viscosa*, *P. marginata*, &c., and very strongly-grown plants of *Primula denticulata*, &c. (Bronze Flora Medal).

Mr. ARTHUR W. WANE, Riverside Nurseries, Colchester, exhibited some hardy flowers, including good plants of *Anemone pulsatilla*, *Narcissus* in variety, *Muscari*, *Primulas*, double flowered *Arabis*, *Erythronium Hartwegii*, &c.

A group of Roses in pots, shown by Messrs. W. PAUL & SON, Waltham Cross Nurseries, Herts, was composed exclusively of new varieties. Among these were Boadicea, a bright pink-coloured Tea variety; Souvenir de William Robinson, bronzy yellow, with red upon the outer petals; H.T. Liberty, bright red or crimson; H.T. Souvenir de Madame Eugène Verdier, white, with apricot-coloured centre; T. Dr. Felix Guyon, yellow; H.T. Marie Louise Poirer, vinous red; H.T. Frau Karl Druschki, white, with pretty, high lobed-shaped bud; H.T. Souvenir du Président Carnot, a very pretty flower, of soft pink colour; the hybrid Soleil d'Or, figured and described in these pages, July 6, 1901, p. 7, &c. (Silver Flora Medal).

Messrs. PAUL & SON, The Old Nurseries, Cheshunt, London, N., exhibited Roses in pots. Amongst these were the new H.T. Lady Battersea, of bright red colour, an effective flower, having fine stems for cutting; Marquise Litta; a new T. named Queen of

THE FLORAL COMMITTEE adopted a resolution of sympathy with the relatives of the late Mr. G. F. Wilson, who was a former Chairman of that body. This Committee recommended one First-class Certificate, and six Awards of Merit to novelties; also a round dozen of Medals for groups of forced shrubs, Cyclamens, Roses Clivias, Pelargoniums, and hardy plants.

Some fine fruits of Royal Sovereign Strawberry and an Apple were all that the FRUIT AND VEGETABLE COMMITTEE had wherewith to concern itself.

Floral Committee.

Present: George Paul, Esq., in the Chair; and Messrs. C. T. Drury, G. Nicholson, C. E. Pearson, R. C. Notcutt, J. Jennings, W. Howe, J. W. Barr, C. Dixon, R. Wallace, C. Jeffries, H. J. Cutbush, J. A. Nix, H. J. Jones, W. Cuthbertson, W. P. Thomson, E. H. Jenkins, R. Wilson Ker, H. Turner, C. E. Shea, W. Marshall, and Rev. F. Page-Roberts.

Cyclamens were shown very finely by the ST. GEORGE'S NURSERY COMPANY, Hanwell, London, W. The group of plants covered about a three-quarter length of one of the long tables, and all of them were well grown, freely-flowered examples, the white and coloured varieties being alike large-flowered and of bold appearance. The "Papilio" and fringed sections were shown with plain foliage and with deeply fringed and tessellated foliage. One plant had rosy-purple

Sweden and Norway, of delicate salmon-pink colour: H.T. Bessie Brown; Rugosa repens, described as a new creeping Rose, with large, white, single flowers, &c. Messrs. PAUL & SON also showed a group of Hippeastrums in flower (Bronze Banksian Medal).

Messrs. FRANK CANT & CO., Braiswick Nurseries, Colchester, exhibited two dozen fine Rose blooms, showing capital specimens of Cleopatra, Madame Hoste, Niphetos, Suzanne-Marie Rodocanachi, &c.

Messrs. HUGH LOW & CO., Bush Hill Park Nurseries, Enfield, London, N., exhibited a group of plants of Turner's Crimson Rambler Rose; the new companion for the above-named, Queen Alexandra, rich pink colour; Hydrangea Hortensia, Malus floribunda Scheideckeri, Magnolia Halleanstallata, Wistarias, &c. Messrs. HUGH LOW & CO., had also pretty groups of their new Schizanthus, known as S. Wisetonensis. The rich pink coloured, and the brown and pink varieties are the most effective, the lighter ones having a rather washy appearance when exhibited thus early. Some of the newer varieties of "Malmaison" Carnations were also shown (Bronze Flora Medal).

Messrs. JNO. LAING & SONS, Forest Hill Nurseries, London, S.E., showed a group of forced shrubs, including "mollis" Rhododendrons, Spiraea Van Houttei, Lilaes, Laburnums, Deutzias, Genista fragrans, &c.

Cineraria variety ramosa, already remarked upon at these meetings, was again shown by Messrs. JAMES VEITCH & SONS, Royal Exotic Nursery, Chelsea. The ten plants shown displayed but little variation, and the strain may be recommended for a distinctness of habit and for the brightness of its reddish-purple flowers. Hippeastrums from the same firm included several pretty varieties, and Sylvanus and Nysa were recommended Awards of Merit. The Veldt has a green centre, and the segments are reddish-brown towards their extremities, quite a new tint. Concilla was the lightest coloured one, having only a few scarlet lines upon the greenish-white segments. Messrs. J. VEITCH & SONS also showed a floor group of Kalanchoe coccinea, consisting of a large number of plants in 5-inch pots, each bearing one head of flowers. The effect of the large number of orange and red coloured corymbs was striking, but the plant is not nearly so good an one as K. flammea. The taller plants would measure 3 feet, and the dwarfier 2 feet.

From the Earl of LATHOM's garden, Lathom House, Ormskirk (gr., Mr. B. Ashton), were shown some thick stems of Euphorbia pulcherrima, that had flowered and produced good bracts within an inch of the old wood (Vote of Thanks).

Messrs. W. PAUL & SON, Waltham Cross, Herts, exhibited a very choice group of flowering shrubs, some of them brought into flower by affording them the shelter of a glasshouse. We remarked Lilac (Syringa) Leon Simon, double flowered; L. Souvenir de Louis Späth, individual flowers large, and of a lilac tint, single-flowered, and the plant very free as shown; L. Chas. Joly, flowers of a bright lilac tint, and double spike, too little developed to afford a true idea of size; L. Arthur Wm. Paul, double flowered, of a lilac tint, the unopened buds red coloured; the white-flowered L. Madame Lemoine; Cerasus J. H. Veitch, double flowered, blush coloured, and very free; C. Fortunei, single flowered, white, with a pink flush; double-flowered French Cherry; double-flowered Almond, flowers very densely set on the shoots; double-flowered Crimson Peach; the double-flowered Pyrus angustifolia, a fine thing; plants of Spiraea confusa, beautifully bloomed; Cytisus præcox, Staphylea colchica, Mollis Azaleas in variety, Wistaria sinensis, Xanthoceras sorbifolia, densely flowered.

Messrs. BARR & SONS, King Street, Covent Garden, showed bulbous flowers largely, Daffodils forming the major part of the exhibit. Tulips were shown with some degree of profusion, and came apparently from plants pushed on under glass. We noted the orange-scarlet Prince of Austria, Snowflake, and the pure white Rosalind; Murillo, blush coloured, double flowered, distinct and pretty; Primrose Queen, a flower of a soft yellow tint; Rose Queen, a well formed crimson bloom; Tulipa Kaufmanniana, a well formed, yellow coloured flower, having a few crimson flakes on the outside of the petals; six flower-heads of Iris Susiana; a few dwarf Alpines, inclusive of Anemones, Androsaces, Saxifragas, Primulas, &c. (Silver Flora Medal).

Messrs. WM. CUTBUSH & SON, Nurseries, Highgate, showed a little group of winter-flowering Carnations, consisting of plants of Winter Beauty, an almost perpetual flowering variety, and of a vivid scarlet tint; a few of the original Souvenir de la Malmaison; and two plants with one bloom each of Cecilia, a shapely yellow

coloured flower of tall growth. Messrs. W. CUTBUSH & SONS also showed a group of forced flowering shrubs, which included "Ghent" and "mollis" Rhododendrons, Magnolia Soulangiana, double white and double red Thorns (standards), Laburnums, Viburnums, &c. (Silver Banksian Medal).

Messrs. B. S. WILLIAMS & SON, Upper Holloway, London, N., showed a corner group of handsome, well-grown Dracenas, Palms, Aspidistras, Bamboos, variegated Acer Negundo, &c.

Awards.

Auricula Firefly.—A showy alpine variety, maroon-crimson in colour with exceedingly clear yellow centre. The flower has extraordinary size and form (Award of Merit).

Auricula William Henwood.—A green-edged show variety, paste cream-coloured surrounded by irregular ring of blackish-purple (Award of Merit).

Auricula Rosy Morn.—An alpine variety of extraordinary size, colour cherry-red, divided from the brightly coloured yellow centre by a thin purple ring. All from Mr. JAMES DOUGLAS, Edenside Nurseries, Great Bookham (Award of Merit).

Hippeastrum Nysa.—A flower of moderate size, excellent form, and very deepest crimson-colour. From Messrs. JAS. VEITCH & SONS (Award of Merit).

Hippeastrum Sylvanus.—Of moderate size, extremely imbricate, segments recurving a little. Colour scarlet, mottled with white. From Messrs. JAS. VEITCH & SONS (Award of Merit).

Iris Bucharica.—This species has been named by Professor Michael Foster. It has very bright green, glossy leaves, that arch prettily; the flowers are white, with yellow lip, about 14 inches high; shown by Miss WILLMOTT, Warley Place, Warley (First-class Certificate).

Primula viscosa "Spring Beauty".—Described as a cross between this Primula and Auricula C. J. Perry. The leaves are about 2½ inches wide and 3 inches long, a little more ovate than those of the Primula, and notched as they are; the flowers are 1½ inch across, rich, deep purple, with cream-coloured centre, petals notched in centre, just as those of the Primula. Shown by Mr. E. A. HAMBRO, Esq., Hayes Place Gardens, Hayes, Kent (gr., Mr. Wm. Beale) (Award of Merit).

Narcissus Committee.

Present: H. B. May, Esq. (Chairman); Miss Willmott, Revs. G. H. Engleheart, G. E. Bourne, and W. Wilks; Messrs. W. Poupert, W. Goldring, J. T. Bennett-Poë, R. Sydenham, P. R. Barr, W. Ware, J. T. Pope, J. D. Pearson, G. Reuthe, W. Copeland, and C. R. Scrase Dickens.

The committee had no large quantity of material to deal with, owing to the check of the last few cold days and nights. The following awards were made:—

First-class Certificate to White Ajax Peter Barr, from Messrs. BARR. Awards of Merit to Ajax Sir Francis Drake, an enlarged Emperor, from Messrs. KENDALL, Newton Poppleford; and to Torch, a highly decorative garden variety of N. incomparabilis, great in stature and vigour, yellow with glowing red crown, from the Rev. G. H. ENGLEHEART.

Medals were awarded to groups as follows:—

Miss CURREY, Lismore, Ireland, a Silver-gilt Flora Medal for a very extensive and choice collection, including the finest of the Engleheart seedlings as yet distributed.

Messrs. BARR & SON, Silver Flora Medal for a fine bank of all available varieties in flower. In the centre were arranged many vases of the best novelties, which were much admired through the day, in particular the splendid new white Ajax Peter Barr.

Messrs. B. S. WILLIAMS & SON, Bronze Banksian Medal for a good representative collection.

Mr. B. HARTLAND, Cork, contributed some large bunches, for which a Vote of Thanks was given.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the Chair); and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshaw, H. M. Pollett, H. Ballantine, E. Hill, J. Douglas, W. A. Binney, F. W. Ashton, W. Thompson, H. T. Pitt, J. W. Odell, W. H. Young, W. Boxall, T. W. Bond, J. W. Potter, J. G. Fowler, and H. Little.

H. T. PITT, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood), showed a very interesting and well-arranged group in which all sections of Orchids were represented, and for which a Silver Flora Medal was awarded. The greater number were varieties of Odontoglossum crispum of a very fine type, and excellently

well grown. Several spotted forms were in the group, the best of which was the fine, heavily-blotched O. crispum "Abner Hassell," which received an Award at the last Temple Show; good O. Pescatorei, O. triumphans, O. x Adriane, O. x Humeum, O. x Andersonianum, and other Odontoglossums were also present; a good selection of Cattleya Schroderae, of which C. S. Pitt's variety is by far the most remarkable, the colour of the lip being ruby-purple; Dendrobium atro-vioaceum, Cypripedium Mastersianum, C. x George Llewellyn, a pretty C. nivicum cross, with white flowers marked with purple; Angreum sesquipedale, Chondrorhyncha Chestertoni, and other remarkable species.

Messrs. JAS. VEITCH & SONS, Chelsea, were awarded a Silver Flora Medal for a remarkable group of hybrid Orchids, to which the bright yellow, orange, and purple tints of Lælio-Cattleya x Hippolyta, L.-C. x highburyensis, L.-C. x Myra Princess of Wales, Lælia x Latona, L. x Mrs. Gratrix, and others of that class, imparted a showy feature. The largest rich claret-purple flowers were of L.-C. x Dominiana Langleyensis; and other fine hybrids were L.-C. x Wellsiana, L.-C. x Callistoglossa, L.-C. x Lucilia, L.-C. x Duvaliana, L.-C. vacuna, Lælia x Novelty, Cattleya x intertexta, Chysis x Chelsoni, C. x Sedeni, Epidendrum x Clarissa, Dendrobium x Aleippe, and the new Selenipedium x Hylas (leucorhodium x caudatum Wallisii).

Baron Sir H. SCHRÖDER, The Dell, Egham (gr., Mr. H. Ballantine), was awarded a Silver Banksian Medal for a group of very fine things, chiefly cut-flower spikes. Among them were the original Odontoglossum x Lecanum, the fine, heavily blotched O. crispum Rex, the beautifully formed and finely spotted O. x Adriane Memoria Victoriae Reginae, O. x elegans, Eastwood Park variety, O. Pescatorei Schröderianum, finely blotched with rose-purple; O. coronarium, Lælia x Edissa, Angreum Ellisii, &c.

Messrs. F. SANDER & SONS, St. Albans, obtained a Silver Banksian Medal for a fine group, in which their hybrid Phaius were effective, their large flowers varying from pale rose to claret-purple. Four handsome forms of Odontoglossum x crispo-Harryanum were shown, three of them having nearly white flowers, heavily marked with purple, the other, the variety primulinum having a bright yellow ground. Other noteworthy plants were Cattleya Schroderae, Odontoglossum crispum, O. ramosissimum, O. luteo-purpureum, Saccolabium calceolare, and Phaius Sanderiana.

Messrs. CHARLESWORTH & CO., Heaton, Bradford, staged a small group of plants, all of much merit. In the centre was a plant of Cypripedium x Colossus (villosus giganteum x Sallieri aureum), having an upper sepal that was green-tinted at the base, changing to pale yellow towards the upper margin, and marked with purple-brown; the broad petals and lip resembled those of a gigantic C. villosus. Odontoglossum crispum Dora had finely-formed, milk-white flowers that were prettily-blotched with chocolate-purple over the greater part of the surface; O. x Hallio-crispum had a fine spike of yellow, chocolate-spotted flowers; O. x Adriane Daphne, flowers nearly as large as O. crispum, and evenly spotted; and other varieties of O. x Adriane of good quality; Cattleya Schroderae Fascinator, C. Trianae, Uplands variety, very fine in colour; and Lælia Jongheana alba, the best pure white which has yet appeared (Bronze Banksian Medal).

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr., Mr. J. Davis), was awarded a Silver Banksian Medal for three magnificently grown plants of Dendrobium Devonianum, with long and well-matured pseudo-bulbs, thickly clad with pretty white and rose flowers with orange centres. The plants were flowering on home-made growth, and better or more profusely flowered ones have probably not been shown before.

Captain HOLFORD, C.I.E., Westonbirt (gr., Mr. Alexander), showed Odontoglossum x elegans "Westonbirt variety," with a very strong spike with five branches. It is larger and lighter in colour than the original, and a fine and distinct form; also a Cattleya Schroderae, with a velvety purple blotch on the lip.

Messrs. B. S. WILLIAMS & SON, Holloway, in their group of Amaryllis and Clivias, staged a number of good Odontoglossums, viz., Edithae, hebraicum, Andersonianum, Wilckeanum, triumphans, &c. The group likewise contained Ada aurantiaca, Calanthe Sanderiana, Cattleya Meodeli, C. Mossie, Cymbidium Devonianum, Cypripedium x Lebaudianum, C. Masalanum, Trichopilia lepidia, &c.

NORMAN C. COOKSON, Esq., Oakwood, Wylam, Northumberland (gr., Mr. H. J. Chapman), sent Cypripedium x Wm. Lloyd superbum, a grand form, with flowers far superior to any preceding it, notwithstanding that the

inflorescence bore two flowers. The fine purplish-rose flowers bore dark chocolate-purple markings and white tips to the dorsal sepal and petals.

F. WELLESLEY, Esq., Westfield, Woking (gr., Mr. Gilbert), showed *Cypripedium* × W. E. Dickson, a fine *C. Rothschildianum* hybrid, of which the other parent is not recorded. The flowers, which are the darkest of the section, partake much of the shape of *C. Rothschildianum*; and the stamens and the very dwarf habit seemed to indicate that a *C. bellatulum* hybrid might have taken part in its production. The upper sepal is tinted a dark rose, and has dark purplish lines running through it; petals extended, tinged with rose, and bearing distinct dark chocolate-purple markings; lip reddish. Another plant to be admired was *C. × Chapmani* Westfield variety, a broad and well-formed flower, lighter in colour than the original.

DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr., Mr. Stables), showed the handsome *Odontoglossum* × *Adrianae* Crawshayanum, and *Odontoglossum* × *Crawshayanum* (Hallii × *Harryanum*).

H. F. SIMONDS, Esq., Woodthorpe, Beckenham (gr., Mr. Geo. Day), showed *Cypripedium punctatum*, which flowers freely with him, and a well-grown *Odontoglossum Peseatorei* Leeanum.

WALTER COBB, Esq., Dulcote, Tunbridge Wells (gr., Mr. J. Hawes), sent *Odontoglossum triumphans* Cobbiæ, a very large and darkly blotched flower; the fine *Cypripedium* × *Mary Beatrix*, and the reddish-yellow *Sophro-Laelia* × *Marriottiana*.

Messrs. HUGH LOW & Co., Bush Hill Park, showed *Cattleya Schroderæ* alba, "Low's variety," a very fine pure white; *C. S. Phyllis*, of peach-blossom colour, with rosy-orange disc to the lip; other varieties of *C. Schroderæ*; *C. Trianae fulgens striata*, resembling *Backhouseiana*; *Cypripedium* × *macropterum*, *C. × Morganæ*, and *Saccolabium ampullaceum*.

THOMAS CARRUTHERS, Esq., Gaskmore, Reigate (gr., Mr. G. Collip), showed *Odontoglossum* × *Wilkeanum* Carruthersii, a pretty form; and J. RICHARDSON, Esq., Hale Croft, near Altrincham (gr., Mr. W. Jenkins), sent a fine spike of *Dendrobium Dalhousieanum*, and three *Odontoglossums*.

Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), showed a fine spike of *Miltenia Bleuana*, and one of the very richly marked *Miltenia vexillaria Memoria G. D. Owen*.

Awards.

FIRST-CLASS CERTIFICATE.

Odontoglossum × *Adrianae Memoria Victorie Reginae* from Baron Sir H. SCHRÖDER, The Dell, Egham (gr., Mr. H. Ballantine).—The finely grown plant had a strong spike with flowers of perfect shape, the petals fringed and the lip crimped and fimbriated; colour white, evenly and closely blotched with dark purple.

AWARD OF MERIT.

Lælia × *Flavina* (pumila × *flava*), from Messrs. JAS. VEITCH & SONS.—A very singular and pretty dwarf hybrid with short, stout growths like *L. pumila*, but with a flower on an elongated spike, equal in size and form to that of *Cattleya Percivaliana*. In colour a soft primrose-yellow, with orange-coloured disc to the lip.

Masdevallia × *Ciree* (tovarensis × *Chimæra*), from Messrs. JAS. VEITCH & SONS.—The first of the *M. Chimæra* crosses. Leaves like those of *M. towarensis*, but thinner; flowers ascending, on slender stems. In size larger than *M. towarensis*, and with the equal triangular arrangement of the perianth as in *M. Chimæra*. Colour yellowish with red papillæ, and three red lines in each segment continued into the slender, reddish-coloured tails.

Lælio-Cattleya × *Dora* (*L. C.* × *Hippolyta*, *Phoebe* × *C. Schroderæ*).—A pretty flower, nearly as large as *C. Schroderæ*, and of an indescribably pretty salmon-tinted yellow hue, with a darker colour on the lip.

Zygopetalum × *Perrenondii* "Cecil Rhodes."—From H. T. PITT, Esq. (gr., Mr. Thurgood). The plant bore a strong spike. Sepals and petals green, blotched with purple. Lip nearly covered with blue veining and tinting, on a white ground.

Fruit and Vegetable Committee.

Present: George Bunyard, Esq. (Chairman), and Messrs. Jos. Cbeal, H. Eslings, S. Mortimer, A. Dean, H. J. Wright, W. Pope, G. Kelf, J. Jaques, C. G. Nix, J. Smith, F. Q. Lane, J. Willard, G. Wythes, J. H. Veitch, H. Somers Rivers, and H. Balderson.

Forced fruits of Strawberry Royal Sovereign were shown by A. HARGREAVES BROWN, Esq., M.P., Broome Hall, Dorking. There were half a dozen punnets of large, ripe fruits (Silver Banksian Medal).

Apple Edward VII. was shown by Mr. H. ROWE,

Barbourn Nurseries, Worcester. The fruits were yellow-coloured, like those of Golden Noble, hard, round, of moderate size.

Beach's Patent Weed Extractor, shown by Mr. J. H. BEACH, The Gardens, Hazells, near Gravesend, is an implement like a narrow rake with three prongs, each prong divided in the centre with a slit becoming narrower at the top. It is recommended for dragging Daisies out of lawn-grass, and weeds from beds and borders.

The Lecture.

In the afternoon a lecture upon "Plants for Pergolas and Verandahs," by Miss JEKYLL, V.M.H., was read by the Rev. W. Wilks, M.A., Secretary.

Miss Jekyll gave some useful hints upon the construction of pergolas of various kinds, and recommended suitable materials for the purpose. A selection of the best plants for particular portions of the pergolas and verandahs recommended was given, amongst which were the following species:—*Aristolochia siphia*, *Wistaria*, *Clematis montana*, &c.; Ayrshire Roses, *Vitis cordata*, *V. Coignetiae*, the Chasselas or Royal Mascadine Vine, *Laburnum*, the Snowy Mespilus, *Guedres Rose*, *Wych Hazel*, *Bignonia radicans*, *Polygonum Baldschuanicum*, double-flowered Brambles, *Crataegus pyracantha*; various Roses, including *Crimson Rambler*, *Longworth Rambler*, &c.; Orange Gourds, Hops, *Azara microphylla*, &c.

Mr. Harry Jas. Veitch, who presided, and Mr. George Bunyard offered some valuable advice upon the subject so interestingly introduced by the authoress.

BRIGHTON AND SUSSEX HORTICULTURAL.

APRIL 8, 9.—In dull but dry weather, this Society held the first of the three exhibitions which form its programme for the present year. The spacious Corn Exchange and the space under the Dome were filled to overflowing. The entries were much more numerous than is usual, the quality throughout very good, and the competition keen.

In addition to the competitive exhibits, Messrs. W. BALCHIN & SON brought from their Hassocks nursery a very fine group of flowering plants mingled with foliaged subjects; the chief attraction in the group was a batch of the lilac-coloured *Tetratheca ericoides*; this was deservedly awarded the Silver-gilt Medal of the Society.

MESSRS. BARR & SON, King Street, Covent Garden, had a representative collection of cut Daffodils; Mr. Murrell, gr. to Col. ROGERS, Burgess Hill, Maidstone, a very fine specimen *Cyclamen persicum*; and Mr. G. W. PIPER, Uckfield, had a large collection of cut Roses. Messrs. J. CHEAL & SONS had a collection of Apples, with plants and flowers. To each of these the Silver Medal of the Society was awarded.

COMPETITIVE CLASSES.

Groups and tables of plants were a leading feature, and several classes were devoted to them. The 1st prize in the open class for a group was won by Mr. GEO. MILES, nurseryman, Brighton, who had an exceedingly tasteful arrangement; Mr. H. HEAD, nurseryman, Hove, was 2nd.

In the gentlemen gardener's division, Mr. W. E. Anderson, gr. to B. PARISH, Esq., Preston Park, was placed 1st, for an attractive group of flowering and foliage plants. Tables of foliage and flowering plants were fewer than usual; Mr. GEO. MILES again came in 1st.

Collections of Orchids arranged on tables are always an attractive feature at Brighton. Mr. H. Garnett, gr. to R. G. FLETCHER, Esq., Brighton, was placed 1st; he had a very fine piece of *Cymbidium Lowianum*, also *Cattleya citrina*, *Dendrobium*, *Odontoglossums*, &c. Mr. J. Harper, gr. to E. E. TUCKER, Esq., Brighton, was 2nd.

A very pretty feature at Brighton is the decorated mantelpieces and hearths. These are arranged against the walls of the Corn Exchange, and they afforded object-lessons in house and room decoration. Mr. GEO. MILES was 1st, with a truly artistic arrangement, light, effective, and nicely balanced; Mr. W. E. ANDERSON was 2nd.

There were several classes for Hyacinths in pots, in twelves, sixes, and threes. The best collection in the larger class came from Mr. C. F. BUNNEY, Brighton; Mr. J. HARPER was 2nd.

Early Tulips made a good feature. In the open class for twelve pots Mr. W. E. ANDERSON was 1st; Mr. J. HARPER was 2nd.

Of Lily of the Valley, twelve pots which gained the 1st prize for Messrs. W. MILES & Co. were very good. There were also Freesias, Mignonette, double Violets, *Polyanthus*, *Primroses*, *Auriculas*, double Chinese *Primroses*, *Hydrangeas*, &c.

Messrs. W. MILES & Co.'s six *Auriculas* were a very free-flowering and fragrant yellow variety, known as Yellow Gem.

Collections of six plants of *Primula verticillata*, well

grown and bloomed, were charming; and such things as *Chrysanthemum frutescens*, *Dielytra spectabilis*, *Astilbe japonica*, *Deutzias*, and *Solomon's Seal* were numerous and good.

Two classes, one for twelve and the other for six *Genistas*, brought numerous freely grown and flowered *Cytisus racemosus*. Messrs. W. MILES & Co.'s 1st prize twelve were excellent in every way.

Cinerarias were numerous. The 1st prize twelve, shown by Mr. Pressland, gr. to H. W. SMITHERS, Esq., were well grown and bloomed, the flowers medium-sized, and finely formed.

Daffodils were well shown in several classes, while pots of *Polyanthus Narcissi* were laden with fragrant blossoms.

Cyclamen persicum were finely shown by Mr. Murrell, gr. to Col. ROGERS, Burgess Hill; while the collections of six white Arums made a great feature, Mr. ANDERSON was placed 1st, and Mr. HARPER was 2nd. Greenhouse and the mollis section of *Azaleas* made up a very fine bank of colour on the orchestra under the dome.

There was a class for six pots of Strawberries in pots, Mr. Goulding, gr. to W. VOULES, Esq., taking the 1st prize with excellent Royal Sovereign.

MARKETS.

COVENT GARDEN, APRIL 10.

[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 revise the list, and 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 supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. EN.]

VEGETABLES.—AVERAGE WHOLESALE PRICES.

| | s.d. | s.d. | | s.d. | s.d. |
|---------------------|------|------|---------------------|------|------|
| Artichokes, Globe, | | | Onions, new, green, | | |
| per dozen | 2 0 | 2 6 | doz. | 2 0 | 2 6 |
| — Jerusalem, p. | | | — English, per | | |
| sieve | 1 0 | 1 6 | cwt. | 6 0 | 7 0 |
| Asparagus Sprue, | | | — in bags | 5 0 | 6 0 |
| bundle | 0 8 | — | — Egyptian, bag | 6 6 | — |
| — English | 4 6 | — | — picklers, per | | |
| — Giant | 8 6 | 15 0 | sieve | 2 6 | 3 6 |
| — Paris Green | 6 0 | — | Parsley, per doz. | | |
| — Spanish | 1 2 | — | bunches | 4 0 | 5 0 |
| — various | 1 0 | 3 0 | — sieve | 2 0 | 2 6 |
| Beans, dwf., house, | | | Parsnips, p. cwt. | | |
| per lb. | 0 10 | — | bag | 2 6 | 3 0 |
| — Madeira, per | | | Peas in lb. bags | 0 5 | — |
| basket | 2 0 | 2 6 | — in flats | 8 6 | — |
| Beetroots, per | | | — Jersey, per lb. | 2 6 | — |
| bushel | 1 9 | 2 6 | Potatoes, per ton | 50 0 | 90 0 |
| Cabbage, p. tally | 5 0 | 6 0 | — new, per lb. | 0 2 | — |
| Carrots, per doz. | | | — 2 Frame, lb. | 0 5 | — |
| bunches | 2 6 | 3 6 | — new Teneriffe, | | |
| — unwashed, per | | | per cwt. | 12 0 | 16 0 |
| bag | 3 0 | 5 0 | Radishes, p. doz. | | |
| — New, French, | | | bunches | 1 0 | 2 0 |
| per bunch | 1 4 | — | Rhubarb, Yorks, | | |
| Cauliflowers, per | | | per dozen | 0 6 | 1 0 |
| dozen | 1 0 | 2 0 | — outdoor, per | | |
| — tally | 4 0 | 10 0 | dozen | 1 6 | 3 0 |
| Celery, per dozen | | | Salad, small, pun- | | |
| bundles | 10 0 | 12 0 | nets, per doz. | 1 3 | — |
| Chicory, per lb. | 0 2 | — | — Scotch Kale, bus. | 1 6 | — |
| Coleworts, bushel | 1 6 | — | Seakale, per doz. | | |
| — bag | 2 0 | 3 0 | punts | 15 0 | — |
| Cress, per dozen | | | — natural, doz. | 12 0 | — |
| punnets | 1 3 | — | Shallots, per lb. | 0 2 | — |
| Cucumbers, doz. | 2 0 | 5 0 | Spinach, English, | | |
| Endive, new | | | bushel | 2 6 | 3 0 |
| French, doz. | 1 6 | 2 0 | Stachys, lb. | 0 3 | — |
| Garlic, per lb. | 0 3 | — | Tomatoes, Canary, | | |
| Horseradish, fo- | | | boxes | 3 0 | 5 0 |
| reign, bunch | 1 3 | 1 6 | — English, lb. | 1 6 | — |
| Leeks, 12 bunches | 2 0 | 2 6 | Turnip-Tops, per | | |
| Lettuces, Cos, per | | | bushel | 1 0 | — |
| dozen | 2 6 | 3 0 | — bag | 1 6 | 2 0 |
| — Cabbage, per | | | Turnips, per doz. | | |
| dozen | 0 6 | 1 0 | bunches | 2 0 | — |
| Mint, new, per | | | — bag | 1 6 | 2 0 |
| bunch | 0 8 | — | — new, French, | | |
| Mushrooms, house, | | | bunch | 1 0 | 1 6 |
| per lb. | 0 9 | — | Watercress, per | | |
| Onions, case | 6 0 | — | doz. bunches | 0 6 | 0 6 |

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s.d. | s.d. | | s.d. | s.d. |
|-------------------|------|------|-------------------|------|------|
| Apples, home- | | | Grapes, Gros Col- | | |
| grown, Wel- | | | mar, A., p. lb. | 4 0 | 5 0 |
| lington, per | | | — B., per lb. | 2 0 | 2 6 |
| bushel | 8 0 | 10 0 | — Alicante, per | | |
| — Californian, | | | lb. | 3 0 | 5 0 |
| cases | 12 0 | 16 0 | — Almeida, per | | |
| — Australian | | | 12 lb. | 7 0 | 10 0 |
| — Tasmanian & | | | Lemons, per case | 8 6 | 15 0 |
| Victorian case | 9 0 | 16 0 | Oranges, Bitter, | | |
| — Large Cookers, | | | case | 5 0 | — |
| per bushel | 6 0 | 7 0 | — Denia, case | 1 0 | 40 0 |
| Bananas, bunch | 7 0 | 12 0 | — Murcia, blood, | | |
| — loose, p. doz. | 1 0 | 1 6 | case | 5 6 | — |
| Cape Fruit— | | | — Tangierine, | | |
| Grapes, case | 7 0 | 10 0 | per case (100). | 4 0 | — |
| Pears | 8 0 | 10 0 | Pines, each | 3 9 | 1 0 |
| Chestnuts, bag | 15 0 | 16 0 | Sapucaia Nuts, | | |
| Cobnuts, Kentish, | | | per lb. | 1 0 | — |
| per lb. | 1 0 | — | Strawberries, A., | | |
| Cranberries, case | 12 0 | — | per lb. | 1 0 | 6 0 |
| — quart | 8 0 | — | — B., per lb. | 1 6 | 2 6 |

PLANTS IN POTS—AVERAGE WHOLESALE PRICES.

| | s.d. | s.d. | | s.d. | s.d. |
|--------------------|-----------|------|----------------------|-----------|------|
| Acacias, per doz. | 6 0-8 0 | | Evergreens, vars., | | |
| Adiantums, per | | | per dozen | 4 0-18 0 | |
| dozen | 5 0-7 0 | | Ferns in variety, | | |
| Arbor Vitæ, per | | | per dozen | 4 0-18 0 | |
| dozen | 6 0-36 0 | | Genistas, pr. doz. | 8 0-10 0 | |
| Arum Lilies, per | | | Hyacinths, white, | | |
| dozen | 4 0-6 0 | | per dozen | 10 0-12 0 | |
| Aspidistras, per | | | colours, per | | |
| dozen | 18 0-34 0 | | dozen | 8 0-10 0 | |
| Azaleas, per doz. | 24 0-48 0 | | Hydrangeas, per | | |
| Cannas, per doz | 18 0 | | dozen | 9 0-30 0 | |
| Cinerarias, per | | | Marguerites, per | | |
| dozen | 4 6-6 0 | | dozen | 6 0-8 0 | |
| Clematis, per doz. | 12 0 | | Narcissus, single, | | |
| Crotons, per doz | 18 0-30 0 | | per dozen | 6 0-8 0 | |
| Cyclamens, per | | | Palmis, var., each | 1 0-20 0 | |
| dozen | 8 0-12 0 | | Pelargoniums, | | |
| Daffodils, double, | | | scarlet | 6 0-8 0 | |
| per dozen | 6 0-8 0 | | white | 6 0-8 0 | |
| Dracenas, var., | | | Spiræas, per doz. | 6 0-10 0 | |
| per dozen | 12 0-30 0 | | Sweet Briars, per | | |
| Ericas, per dozen | 6 0-18 0 | | dozen | 3 0-4 0 | |
| Eunomus, vars., | | | Tulips, all colours, | | |
| per dozen | 6 0-18 0 | | per dozen | 0 9-1 0 | |

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

| | s.d. | s.d. | | s.d. | s.d. |
|---------------------|----------|------|---------------------|---------|------|
| Anemones, per | | | Marguerites, Yel- | | |
| doz. | 1 6-2 0 | | low, per doz. | 1 6-2 0 | |
| Arums, per doz. | 1 6-4 0 | | Star, per doz. | 1 6-0 0 | |
| Asparagus Fern, | | | Merm. Roses, p. | | |
| per bunch | 1 6-2 6 | | bunch | 2 0-5 0 | |
| Azaleas, per doz. | 4 0-6 0 | | Mignonette, per | | |
| Carnations, per | | | dozen bunches | 3 0-6 0 | |
| bunch | 1 0-2 6 | | Mimosa, p. bunch | 1 0-1 6 | |
| Cattleyas, doz. | 9 0-12 0 | | Narcissus, per | | |
| Eucharis, per doz. | 3 0-4 0 | | dozen | 1 6-4 0 | |
| Freessias, p. doz. | 2 0-4 0 | | Pelargoniums, | | |
| Gardenias, p. doz. | 1 6-2 0 | | Scarlet, per | | |
| Jonquils, p. doz. | 1 3-1 6 | | dozen | 4 0-6 0 | |
| Lilium Harrisii, | | | Roses, Red, Gen- | | |
| per dozen | 3 0-6 0 | | eral, per doz. | | |
| Lily of the Valley, | | | blossoms | 1 0-1 6 | |
| dozen bunches | 6 0-8 0 | | Smilax, p. bunch | 1 6-3 0 | |
| Maidenhair Fern, | | | Tulips, all colrs., | | |
| dozen bunches | 4 0-6 0 | | per doz. | 4 0-8 0 | |
| Roses, Maréchal | | | Roses, White, per | | |
| Niel, per bunch | 2 6-3 0 | | bunch | 2 0-3 0 | |

REMARKS.—English Apples are few, and Turnip-tops less plentiful. Rhubarb, both forced and outdoor, is abundant. New framed Peas are arriving from the Channel Islands, and Lettuces from St. Malo. English Onions are cheaper. Grape-fruits, per case, 12s. 6d.

POTATOES.

Dunbar Main Crop, 90s.; Up-to-Date, 80s. to 85s.; and other varieties, 45s. to 80s. Seed in market, at various prices. John Bath, 32 & 34, Wellington Street, Covent Garden.

CORN.

AVERAGE PRICES of British Corn (per Imperial qr.) for the week ending April 5, 1902, and for the corresponding period of 1901, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

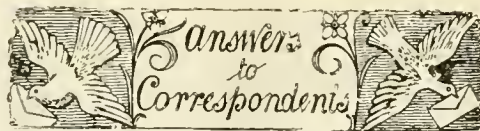
| Description. | 1901. | 1902. | Difference. |
|---------------|-------|-------|-------------|
| | s. d. | s. d. | s. d. |
| Wheat | 26 3 | 27 3 | + 1 0 |
| Barley | 25 3 | 26 5 | + 1 2 |
| Oats | 18 0 | 20 6 | + 2 6 |

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period March 30 to April 5, 1902. Height above sea-level 24 feet.

| 1902. | | DIRECTION OF WIND. | TEMPERATURE OF THE AIR. | | | | RAINFALL. | TEMPERATURE OF THE SOIL AT 9 A.M. | | | | LOWEST TEMPERATURE ON GRASS. |
|----------------------------|-----------|--------------------|-------------------------|--------|-----------------|-----------------|-----------|-----------------------------------|-----------|----------|---------|------------------------------|
| MARCH 30 TO APRIL 5. | At 9 A.M. | | DAY. | NIGHT. | At 1-foot deep. | At 2-feet deep. | | At 4-feet deep. | | | | |
| | Dry Bulb. | | | | | | | | Wet Bulb. | Highest. | Lowest. | |
| | | | | | | | | | | | | |
| SUN. 30 | S. W. | deg. | deg. | deg. | deg. | ins. | deg. | deg. | deg. | deg. | | |
| MON 31 | S. W. | 40.9 | 38.9 | 51.6 | 33.3 | 0.05 | 44.7 | 45.2 | 45.2 | 25.1 | | |
| TUES. 1 | S. W. | 50.8 | 48.2 | 60.5 | 40.5 | 0.01 | 44.9 | 45.0 | 45.2 | 40.0 | | |
| TUES. 1 | S. W. | 49.9 | 46.4 | 57.3 | 48.4 | ... | 47.5 | 45.7 | 45.3 | 43.5 | | |
| WED. 2 | N E | 45.9 | 43.1 | 50.7 | 32.3 | ... | 46.0 | 46.2 | 45.5 | 22.5 | | |
| THU. 3 | S. W. | 43.1 | 39.3 | 53.3 | 34.9 | 0.06 | 45.4 | 46.2 | 45.7 | 30.3 | | |
| FRI. 4 | W. S. W. | 45.7 | 40.1 | 52.7 | 34.9 | 0.04 | 45.1 | 46.0 | 45.8 | 27.6 | | |
| SAT. 5 | S. W. | 45.4 | 44.4 | 52.4 | 39.5 | 0.06 | 45.3 | 46.0 | 45.8 | 34.3 | | |
| MEANS | ... | 46.0 | 42.5 | 54.1 | 37.7 | 0.22 | 45.6 | 45.8 | 45.5 | 31.9 | | |

Remarks.—A week of very variable weather, dull days, cold winds, and frequent showers.



EDITOR AND PUBLISHER.—Our correspondents would obviate delay in obtaining answers to their communications, and save much 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 all communications intended for publication, or referring to the literary department, should be directed to the EDITOR. The two departments, publishing and editorial, are quite distinct, and much unnecessary confusion arises when letters are misdirected.

AMARYLLIS: A. H. The scales are swarming with bulb mites. You will do well to burn the bulbs. Insecticides will be of little use, as the mites are in the interior of the bulb.

ANEMONE: R. B. We can find no fungus; the plants look as if they might have been checked by frost.

BOTTLING AND PRESERVING FRUITS: Northern Reader. The Royal Horticultural Society, 117, Victoria Street, published some years ago in their *Journal* much useful matter on the subject, which may be available on application to the Secretary, at the above address.

"COPPER-FLOWERING" PLUM: De St. We presume you mean *Prunus Pissardi*, which has copper-coloured foliage. The flowers are formed abundantly at this season, and are white.

FIR TREE DEAD: F. L. The borings in the piece of Fir bark have been produced by two different species of insect. The small "shot-holes" are probably the work of the Pine-beetle, *Hylurgus piniperda*; the large hole looks like the work of the Giant Saw-fly, *Sirex gigas*; but without the insects, in either case, it is impossible to be quite certain. The beetle prefers sickly or freshly-fallen trees, but it also attacks apparently sound and healthy ones, and is then very injurious. The saw-fly is only occasionally destructive to Conifers in this country. It is possible the insects may have caused the death of the tree, but one cannot be quite certain of this without more reliable evidence. You could easily ascertain if the insects are present in the other trees by a careful examination of the bark and branches. The presence of the beetle may be detected by the fine grass at the end of their burrows on the bark, they also tunnel in the small terminal branches. The presence of the saw-fly may be detected by the large circular holes in the bark. You should cut down the dead tree and burn it. It may still contain saw-fly grubs, but the beetles will have long ago left it.

GRAPE-VINE THAT FLAYS BY DAY: Constant Reader. Botanists are not agreed as to the mode by which the moisture from the soil reaches to the highest parts of a plant or tree. The greater probability is that the sap ascends in combination with the gases found in soils; the gases being ammoniacal, and the results of the decomposition of animal and vegetable substances in the soil. The soil beneath the roots of the Vine may be destitute of ammonia, and there is scarcely any gas, consequently the water that enters the Vine through the roots is insufficient to replace that which is lost by transpiration from the leaves, hence the flagging by day and the partial recovery during the hours of darkness. Could you not make holes with a crowbar to points below the lowest roots of the Vine, and pour into these strong undiluted liquid-manure, so that the bottom of the border would become impregnated with ammonia which would not be in contact with the roots?

GREEN-FLY ON ROSES AND MAIDENHAIR FERNS UNDER GLASS: Perplexed. As the house is in such a state of disrepair that fumigation would be in vain, you should syringe the Rose-plants with weak soap-suds, or with weak tobacco-water, say 1 quart to 3 gallons of water; or use quassia-water and a little soft-soap, so that it will stick—say 3 oz. to the gallon of water. The proportion of quassia-chips to this quantity of water is 4 oz., boiling them for ten minutes. The Ferns could be dipped overhead in it without fear of injury.

GRUB: A. Elgar. Could you not send a specimen or two for identification?

INSECTS: P. T., Epsom. The Bean-weevil, *Bruchus granarius*.—E. W. L. W. A weevil—very destructive. Trap them with slices of Carrot or Potato, and destroy them.

"LOUDON'S ARBORETUM": A. M. Is still a valuable book, but as we are not book dealers we cannot tell you the price. Ask Mr. Wheldon, Great Queen St., London, W.C.

NAMES OF FRUITS: G. S. Horton. Norfolk Beefing.—Cedo Nulli. Spanish Warden.—X. Baumann's Red Winter Reinette.

NAMES OF PLANTS: Veritas. The top flower, the dark coloured one, is *Odontoglossum triumphans*; the other a pale form of *Odontoglossum Insleayi*. Why not number the flowers?—E. C. 2, *Cattleya Schroderae*; 3, *Oncidium serratum*; 4, *Dendrobium Pierardi*; 5, *Aëranthus Leonis*.—W. B. 1, *Cymbidium eburneum*; 2, *Odontoglossum gloriosum*; 3, *Oncidium sphacelatum*; 4, *Oncidium altissimum*; 5, *Cypripedium x ceananthum*.—Reader, A. C. S. 1, *Asparagus plumosus*; 2, *Nepeta Glechoma variegata*.—R. Wotton. *Marica humilis* (Nat. Ord. Iridæ).—F. A. J. *Rhododendron ciliatum*.—E. R. 1, *Potentilla Fragariastrum*; 2, *Euphorbia amygdaloides*; 3, *Mercurialis perennis*.—R. J. The Wilson bunch-blue Primrose.—Savoir. *Epiphyllum Gartneri* and *Cyrtodeira fulgida*, so far as we can judge without seeing flowers.—N. F. P. *Mercurialis perennis*.—S. P. 1, *Petasites fragrans*; 2, *Scilla bifolia alba*; 3, *Retinospora squarrosa* of gardens; 4, *Nerium Oleander*; 5, *Cupressus Lawsoniana var. erecta viridis*; 6, *Plumbago rosea*.—Friarage. *Dondia epipactis*.—R. R. *Odontoglossum x Andersonianum* of the nearly unspotted type. The extreme variability of this hybrid, especially in the matter of colour, induced him to combine all under *O. x lanceanum*.—R. T. *Odontoglossum odoratum*, and *Bulbophyllum fusco-purpureum*.—A. J. R. *Dendrobium Pierardi*.—H. C., *Grahamia*. *Dendrobium atro-violaceum*, a very good variety of it.—T. H. B., Hants. 1, *Odontoglossum gloriosum*; 2, *Odontoglossum x Wilckeanum*, a very good flower.—C. S. 1, not Boydi, not recognised; 2, *Saxifraga apiculata*. See Engler in *Gardeners' Chronicle*, May 5, 1894.

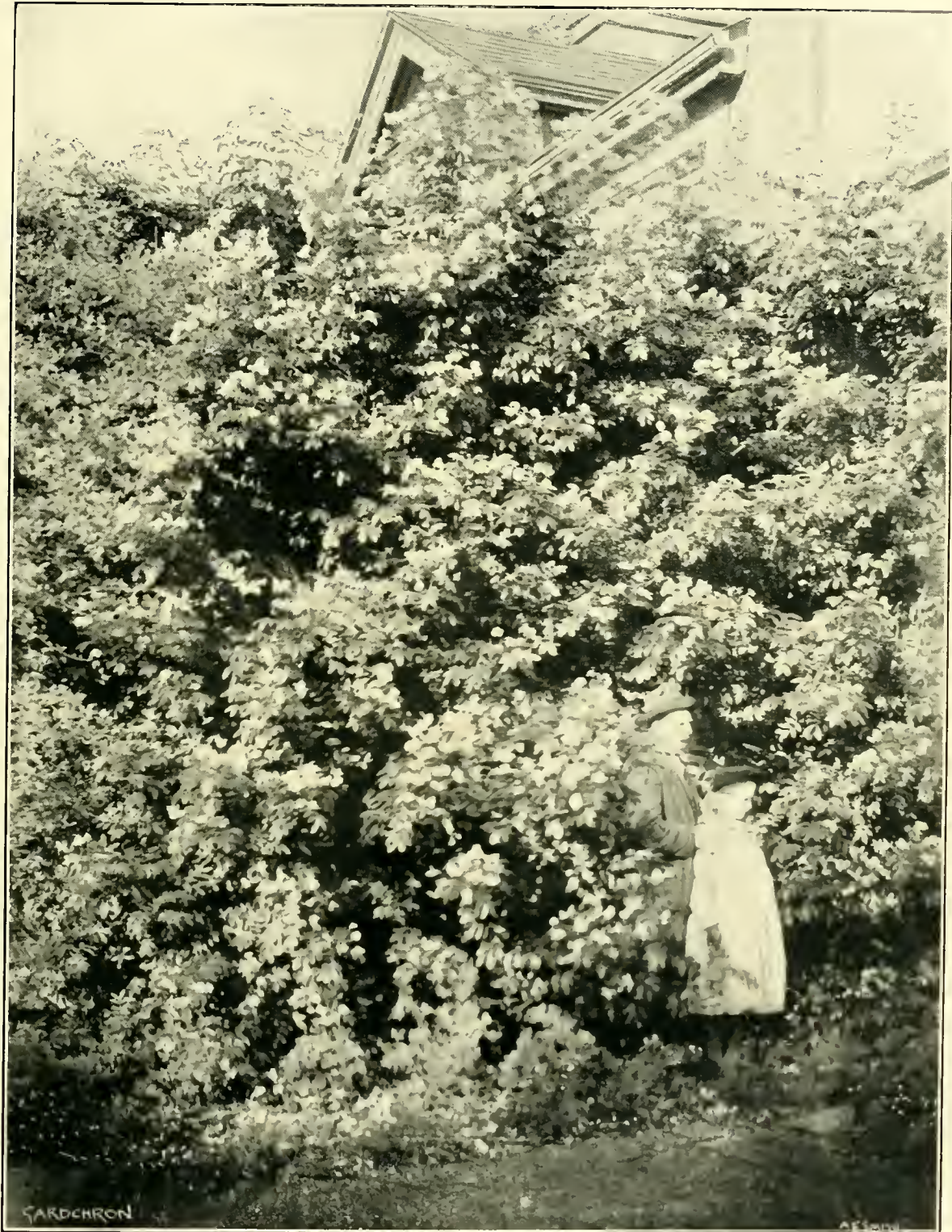
TOMATOS: Watford. The plants are apparently affected by what is termed the "sleepy disease." It is caused by a fungus that first attacks the roots, and grows up in the interior of the plant. Spraying is useless, and we are afraid there is nothing to be done but to burn the plants.

TOMATOS: S. Percy. We do not see any fungus, but we suspect it will shortly develop; have the plants received a check?

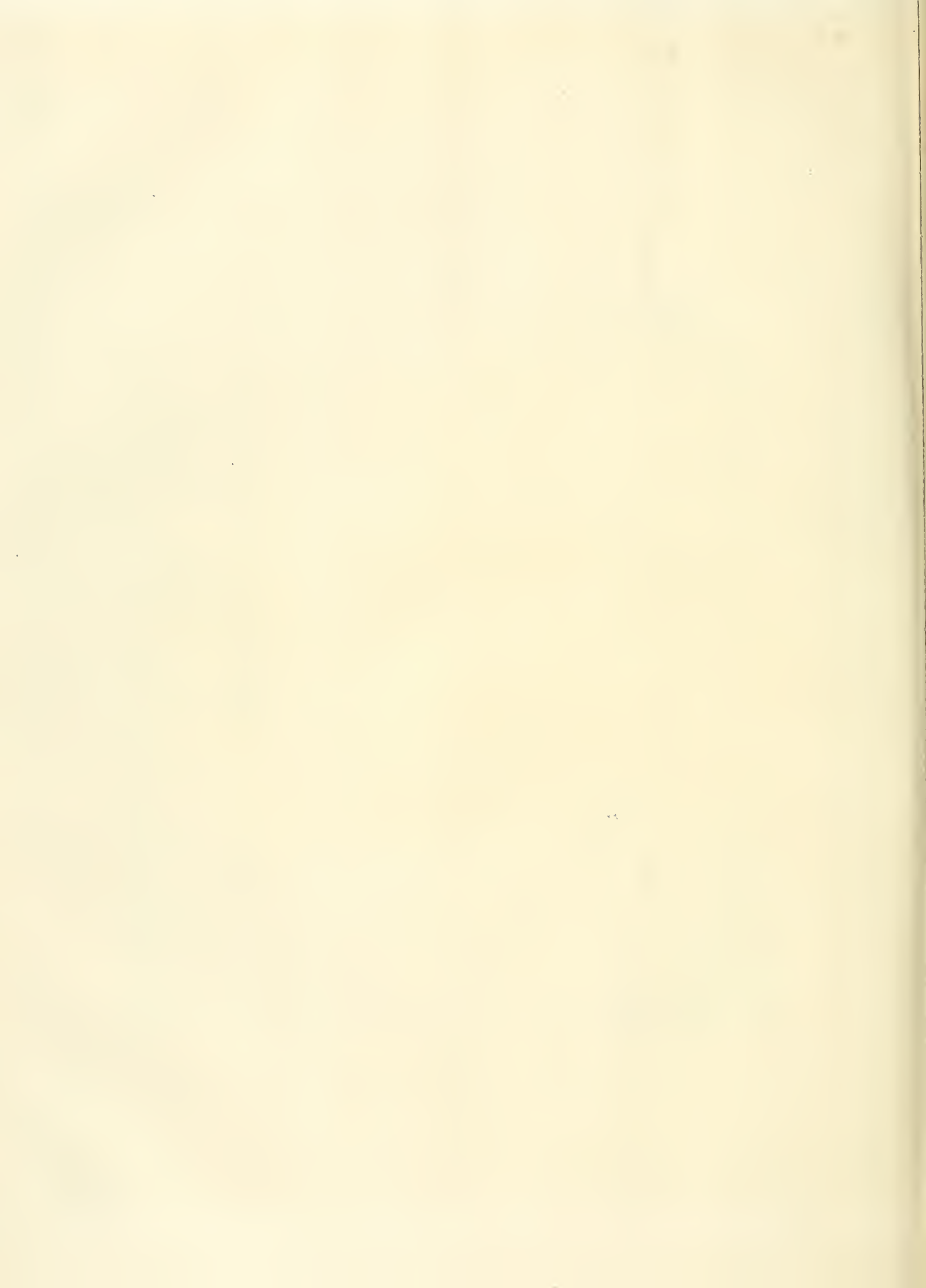
VARIEGATED CUCUMBER: G. B. We have seen such before; both foliage and fruit are variegated.

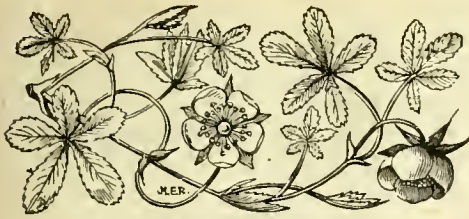
WATER-GLASS: A. E. You should communicate with Mr. K. B. Baghot-de-la-Bere, Burbage Hall, Hinckley, Leicestershire.

COMMUNICATIONS RECEIVED.—Geo. Beghin, Jersey.—C. J., letter follows.—C. Palmer, next week. Glad to see your handwriting again.—De H.—Ed. André, tout à l'heure.—R. D.—T. E. H.—J. A. C.—J. V. & Sons.—N. E. Br.—J. P., Birmingham—Blackie & Son.—C. S.—A. B. R.—J. Bannerman.—J. T.—H. B. W.—T. T.—W. P. B.—J. J. W.—G. W.—R. W.—E. B.—H. F.—C. Pynaert.—J. C. T.—R. B.—A. J. Monro.



CASSIA CORYMBOSA IN THE GARDEN OF THE HON. J. BOSCAWEN, NEAR TRURO:
PHOTOGRAPHED BY F. W. MEYER.





THE

Gardeners' Chronicle

No. 799.—SATURDAY, APRIL 19, 1902.

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FAIRY CUPS.

HAPPY were the days when poetry and imagination held a seat in the council chamber of the human mind. Now, alas! we are as innocent of poetry as we are of the society of elves. It is greatly to be feared that the Board School and the "struggle for life," which the evolutionist has pressed into his service, have effectually chased both the genius of poetry and the last survivor of the genii and the fairy race from our midst. Give us gold, posts of honour, rags of office, lace and furbelows, a name to live though we be dead, and we are satisfied. Were it not for the naturalist and the lover of old-world lore, who are able to turn to the records of the past, and prove their point, the matter-of-fact folk of to-day would deny that fairies ever existed. What matters it that our vocabulary is full of such words as elf, good folk, and genii; or that the French have their *fée*, the Arabs their *jinn*, and the Chinese their *sin*? It means nothing to the practical man of this advanced age. These same folk would deny that there is, or ever was, a man in the moon, or a mermaid in the sea. Ask them for proof, and they have none to give. How can one prove a negative? they enquire. Show them the man's face on a moonlight night, and they laugh you to scorn. They

believe that ridicule will often do more than argument, and so they take the cheapest, easiest, readiest way to put you out of countenance.

Were our fore-elders, then, a set of ignoramuses? Why did they talk so persistently of the elves and fairies, the pixies and genii, the afreets and gude folk, if such never existed? Had they not heard them chime their merry peals on the blossoms of the Harebell, seen them creep into the finger-hut of the Foxglove, observed the marks of their favour on the Cowslip-bloom, and witnessed their deeds of love or hate in woodland revel and midnight dance? Did not the poets give detailed particulars of their servants and livery, and were they not always robed in green? "It's printed in a book," and that is proof enough, in all conscience. Had it not been true, how could it ever be in print?

But we go further. In the woodlands to-day we can find the lovely Fairy-bath (called by botanists *Peziza coccinea*), in which these dainty mortals were wont of yore to take their morning dip. If truth must be told, they were a good deal more cleanly in their habits than some of their

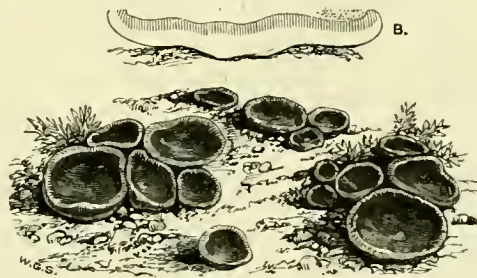


FIG. 79.—A GROUP OF FAIRY CUPS.

B, Cross section of Fairy Cup.

more tangible survivors. How many of us indulge in the luxury of a cold bath in the mornings of spring? Alas! many of our homes have been built without any regard to our necessities, much less have such luxuries as a bath been taken into account.

The dew collected in the vermilion chalice of the fungus sufficed for these little imps, and we may imagine that they were very adept at splashing the sparkling drops into each other's eyes, just as baby brothers delight to do to-day. Let the reader visit some Hazel-copse early in the new year, and search among the fallen twigs, the green moss, the seared and decaying leaves, for the beautiful productions of which I am writing. They are in the shape of a eup, goblet, or bath; and in point of size vary from half-an-inch to an inch and a-half in diameter. One might easily fancy that a clever artist had been employing his leisure time in painting acorn-cups of different sizes, or the insides of the Chestnut-burrs, with the most brilliant colours. The interior of the chalice is of the richest hue. There are many different species, each of which differs more or less from the others in size, colour, texture, shape, and habit of growth; but the true Fairy-bath is dyed vermilion, and contrasts most delightfully with the brown twig or sienna leaf on which it is seen to repose.

Here we have an object worthy of the most careful, detailed, and intelligent study which the most learned and reverend mind is capable of bringing to bear upon it. The

following are a few of the many questions which instantly suggest themselves to the lover of Nature, as he gazes for the first time upon the gorgeous plants. How came these lovely creatures here? What is their use? How are they propagated? By what means are they distributed? What end can this surpassingly beautiful pigment serve amid surroundings so sombre, and in a spot on which the eye of man will seldom rest? What is the peculiar end which these growths serve in the economy of Nature?

WHAT IS THEIR USE?

Yes: that is the proper question with which to begin our investigations. This is an utilitarian age, and we must ever enquire of this and that—*Cui bono*? If a thing has no apparent use, if we cannot at once see how it can be turned to account and made into hard cash, let it be thrown aside. If it will not show itself amenable to the action of our philosopher's stone, which turns all it touches into gold, it is naught. How strangely inconsistent we are! Nature, however, can hold her own. She always has a reason for everything. The mischief is that we deal with her as we deal with foreign people. We do not always master their language, and in consequence we do not understand their mind and meaning. Lords of creation, we spurn everything that requires a little thought and patience, to find presently that we have crushed jewels under our heel, and rendered ourselves poor and despicable when we might have been the victorious bearers of the richest trophies.

Nowhere is this more clearly set forth than in the patient study of the woodland fungi. The autumn witnessed the fall of the leaf. During the winter many a bough or limb of tree has come down with a crash under the force of the gale-blast, as the result of premature decay, or by the stroke, maybe, of the woodman's axe. These decaying twigs, branches, trunks—this accumulation of vegetable *débris*—would become a mighty incubus, were there not always ready to hand an equally mighty army of scavengers, whose duty it is to change the old dead matter into forms of living beauty. The fungi are specially adapted for this important task. They are to the vegetable world what the carrion feeders are to the animal kingdom. Rather, let me say, they are the chemists of Nature, aye, and the alchemists as well. As the analyst seizes on the coal-tar and changes it into aniline, saccharine, and a host of other beautiful and useful things, so does the fungus seize upon the decaying bough and change it into a thing of beauty and a joy for ever. As the modern manufacturer buys up so-called waste products, and converts slag into cement, and refuse into bricks and mortar for the uprearing of a splendid mansion, so does the fairy bath utilise the useless vegetable *débris*. If the manufacturer takes your cast-off suit to pieces, that he may work up the shabby material into a new style of cloth, so the fairy-cup and its fellow workers break up the out-worn garb of the forest trees, and make the leaves, twigs, and branches up again in a thousand different ways for the joy of the beholder, the purifying of the air, and the glory of the Creator.

Wheels within wheels are ever revolving in Nature's, never-resting factory. They

cease not day nor night. The instant a once living creature, be it animal or vegetable, high or lowly, ceases to hold its own, that moment an army of workers bind it hand and foot, and commence the mighty processes of dissolution and reconstruction. The fungi, including bacteria and bacilli, disease germs and other much-dreaded monsters of the subtlest form, are specially set apart for this work of disintegration, and thus we find an answer to the all-important question—what is their use? What end do they serve in the economy of Nature? They break up useless matter, just as the mills of the contractor and manufacturer do. They set free various gases and chemical products which would otherwise be locked up, and unavailable for use. They produce rich vegetable mould, and utilise the materials on which they work for building up their own beautiful, but delicate frames. Truly they are Nature's tireless alchemists; only that they have got past the age of experiment, and have solved the problems of transmutation.

Having perfected their own forms, and produced a plentiful supply of reproductive germs for the continuance of the race, these lovely gems are now handed over to the keeping of a new order of scavengers, and become in turn the prey of molluscs and other animals. They serve these creatures for food, whereas the rotten *débris* would be unfit for their digestion. But this very act of sacrifice brings its own reward. By death they secure continued life, for the snails pass the life-germs through their bodies unharmed, and so the spores are in due course deposited in the resting-place of the mollusc, and left to commence the life-story of the fairy-bath afresh.

Here, in brief, is the answer to our second question. How are the Fairy-cups propagated and distributed? If we were to take a thin slice out of a fungus, just as we cut up a Cucumber, and examine it with the microscope, a world of wonders would unfold itself before the astonished gaze. Standing shoulder to shoulder, like troops on parade, we should see thousands on thousands of upright bodies called sacs, each of which contains exactly eight life-germs or spores; the mouths of these miniature flasks point upwards and outwards, so that if the snails do not devour the plants, the corks fly out of the bottles, something after the fashion of stoppers from the bottles of aerated waters, and away float the spores by myriads. This may be demonstrated with a puff-ball, where the snuff-like powder is composed almost entirely of spores. The breeze catches them, and wafts them to different parts of the wood, and here those that are able to do so commence housekeeping on their own account. *A Sussex Naturalist.*

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

LILIUM JAPONICUM VAR. ALEXANDRÆ.

In a recent number of the *Botanical Magazine* (Tokyo), January 20, 1902, p. 10, Mr. T. MAKINO has some observations on the Flora of Japan, in the course of which, he describes a fine form of this Lily in the following terms.

"*Lilium japonicum*, Thunb., var. *Alexandræ*, Baker, in the *Gardeners' Chronicle*, third ser., xiv. (1893), p. 86; *Ibid.* p. 242, fig. 44.

Lilium Alexandræ, Hort. Wallace.

Lilium Ukeyuki, Hort.

Forma nobilissima, Makino, nov. var.

Stem, stilly erect, terete, hard, attaining about 3–9 decim. in height. Leaves sparse, loosely placed, ovate-elliptical, or ovate-oblong, shortly acuminate, shortly petioled, many-nerved, firm in texture, shining. Flowers, 1–3, erect, shortly pedicellate, infundibuliform, about 10 cm. long and across, white, exceedingly fragrant; perianth, oblong-lanceolate, with an apiculate tip, and a longitudinal, prominent, nervous carina on the back, the inner ones broader than the outer ones; bract lanceolate. Stamens shorter than the perianth, style erect, slightly higher than stamens. Nom. *Jap. Tamoto-yuri.*"

ORCHID NOTES AND GLEANINGS.

PELORIA IN CYMBIDIUM EBURNEUM.

MR. BOUND sends us two flowers of this species illustrative of irregular peloria. The two side petals, in fact, have assumed the appearance of the lip, so that the flower has three lips whence Reichenbach's term "trilabellia." The term peloria is applied to those cases in which a flower that is habitually irregular as in Orchids generally becomes regular. In the flower before us, the flower is made regular by the increase of the irregular portions. In regular peloria the flower becomes regular by the absence of irregular portions, as in the *Cattleya* figured in our last issue. It is possible that regular peloria represents an ancestral condition when all the parts were regular, whilst irregular peloria is due to enhanced development.

ODONTOGLOSSUM CRISPUM "ALPHA."

Flowers of some of the best of the *Odontoglossums* in his group which secured a Silver Medal at the Manchester and North of England Orchid Society's Show on April 3, are kindly sent by Robert Tunstall, Esq., Monkholm, Brierfield, Burnley (gr., Mr. Balmforth). A pale purple-tinted variety with blotches on the sepals, another blotched form, and a grand flower of the white type known as "Pacho," are all excellent; but beyond compare is his flower of *O. crispum* Alpha, from a very small plant flowering for the first time. This flower is of fine proportions, and beautifully marked. The ground white, the sepals light brownish-red with white tips, and an occasional irregular white mark in the dark colouring, so closely are the blotches set. The fringed petals have the reddish spotting commencing near the column in very small, irregular spots, similar to those on *O. × hebraicum*, the spotting gradually getting larger towards the white tips, and covering two-thirds of the surface. The large fringed and fimbriated lip has a yellow disc, beside which are small reddish blotches, and one very large one in front. The very large blotching on the sepals and front of the lip contrasts effectively with the small ones on the petals and sides of the lip.

ODONTOGLOSSUM CRISPUM MATLOCK VARIETY.

To an enthusiastic amateur like J. Woods, Esq., Matlock Villa, Ryde, Isle of Wight, the flowering of such a very fine variety must afford much pleasure. The variety is one of the very best types of *O. crispum*; the flowers large, of fine, firm substance, and the sepals almost as broad as the petals. It is white with a light rose-purple tint spread over the sepals and petals; the former also having one large cluster of, and some smaller, light purple blotches. The petals have each three to four light purple blotches, and the yellow disc of

the lip is partly encircled by red-brown markings. The petals and lip are fringed, and the whole flower is very showy. No two of these fine forms of *O. crispum* are exactly alike. Each has some special attraction, especially for its owner; and it is no wonder that they are such favourites.

VEGETABLES.

NOTES ON BROCCOLIS.

FEW vegetables are more valuable than Broccolis, and few are more erratic: as, for instance, those planted last year, owing to the drought and heat, have not turned in so well as usual; and the late growth, tender and liable to injury by frosts, was injured by hard frosts in the winter, and those that were not injured received a severe check, and are very much retarded. I find that the plants in the gardens of Alnwick Castle are less reliable in turning in at their proper seasons than usual, though the rainfall was not abundant, but it was much better, and more snow than in the south. This season most of the Brassica genus, omitting Coleworts and autumn-sown Cabbage, are more irregular in growth than usual, which is owing to the check when the plants were put out. The best remedy for this condition is to sow and plant out early. I well remember an old gardener sowing Broccoli-seed on a certain date in February if possible, and planting out in the quarters as soon as the plants were large enough to handle, and there was no doubt a great deal of sense in his methods, as in dry seasons the roots went deep into the soil, and drought and heat affected the plants but little. Since that day there have been several useful additions to Broccolis, and some varieties are hardier than others, though of course all are affected in the same manner by drought and heat early in the season. Years ago Cape Broccolis were a favourite vegetable, following Walcheren, and doubtless the introduction of "self-protecting" Broccolis has ousted most of the older forms, and certainly this variety is of great value, but with us it is over before December, a season when good Broccoli are of the most value. I have tried sowing a late lot of the "self protecting" for later use, but I am sorry to say the result is not satisfactory, as the later sown in a favourable season so soon catches up the earliest one; and the best means that I have found of retarding a crop is to plant on a north border, and when the heads are nearly ready for use, to lift and store the plants in an open shed. One of the best early winter Broccolis, either north or south, is Sutton's Michaelmas White; if sown early in March it is ready in October, although last year it came in a month later. Again, the old White Cape afforded the same kind of treatment was later still, so that it shows how much the weather may influence growth. For mid-winter supplies, there is no Broccoli superior to Christmas White, a very dwarf grower, which is in its favour, for being short of stem, and in habit compact, it is not so easily injured by frost. A very fine type of Broccoli coming into use a little later is Superb Early White, and I do not think that Snow's Winter White is equal to Superb Early in quality. I have had to discard Snow's, the old true stock not being obtainable. There are other good varieties, such as the excellent Carter's Sandringham Winter White, a very good mid-winter variety; also the older Osborn's Winter, when it can be obtained true. There is no lack of good varieties, and my only wish is that our seasons were more to be trusted. *G. Wythes.*

ASHWICK HALL.

THE Gloucestershire residence illustrated in fig. 80 was built by the late Mr. Orred, a merchant, in 1857, and the garden was made a few years subsequently by Mr. H. E. Milner. It was unfortunate for the garden, as well as for Mr. Orred, that this gentleman lived but a few years to enjoy the fine place he had made for himself. There is ample evidence to show that subsequent to Mr. Orred's death Ashwick was not afforded proper care. The schemes for effect that Milner had planned with trees and shrubs were consequently prevented from developing perfectly. A designer and planter

six years ago; since that time, he has interested himself in improving the appearance of the gardens and the estate generally. The extent of the gardens has been about 18 acres, including the ground occupied by the house, but at the present time, the energetic gardener and bailiff, Mr. Jno. Pentland, is engaged in the work of converting three or four more acres of the park into lawn.

The best trees are some good specimens of *Sequoia gigantea*, *S. sempervirens*, and *Cedrus Libani*. *Juniperus virginiana* has been planted in small groups and circles, and thrives well, as does *Cupressus macro-*

trees, that have already commenced to bear crops. The wisdom of making this plantation will be more obvious each year. The kitchen garden is not in one piece, nor is it included in the 18 acres above mentioned, but in the park. The illustration on p. 257 (fig. 81) shows some flower-borders in an enclosed garden leading to, and containing the glasshouses. Perhaps it was originally intended to plant this area with vegetable crops, and on either side of the central walk there are even now old espalier fruit-trees, that have long since ceased to be profitable. Excepting these trees, the ground is planted with nothing but flowering plants, and as the photograph shows, some very pretty



FIG. 80.—VIEW OF ASHWICK HALL, SHOWING THE SOUTH-WEST SIDE CLOTHED WITH IVY AND AMPELOPSIS, AND ONE OF SIX CEDARS WHICH FORM AN AVENUE AT RIGHT-ANGLES THERETO.

of new pleasure-grounds necessarily assumes that those who will have the care of the garden afterwards will preserve it in sympathy with the general arrangement, and see that this is not marred by the overgrowth of unthinned evergreens, many of which are probably planted for temporary effect merely. Where this is not done with care and persistence, the best planned and most judiciously planted garden, falls far short of the beauty and interest it might otherwise possess.

The present owner and occupier of Ashwick, is C. H. B. Firth, Esq., a son of the late Mark Firth, of Oakbrook, Sheffield, whose memory is greatly respected in that town, and to whose generosity Sheffield is indebted for its "Firth Park." Mr. Firth purchased the estate, consisting of nearly 1,200 acres, about

carpa lutea. There has been much thinning done in the past six years, and it is still being carried out, with a view to saving those trees and shrubs that previous neglect had not ruined. In the pleasure grounds, and particularly in the park, are some fine old Thorns, and the estate is described as looking its best when these are in blossom. Among the many improvements that have been made since Mr. Firth came to Ashwick are a rosary, and a small "Jubilee" flower garden, made in 1897. The rosary includes some of the best Teas and Hybrid Teas, and is a feature much appreciated. Our illustration on p. 263 (fig. 82) affords an idea of the effect obtained in the "Jubilee" garden, with Stocks, Chrysanthemum maximum, and in the further beds, Dahlias.

Mr. Firth has also planted 1,000 young fruit-

effects are secured. It would result in further improvement if the espalier trees could be replaced with some of the free-blooming "garden" Roses.

The glass-houses are not large structures. They are span-roofed, and are utilised for growing fruits, flowers, and plants for the house. A nice collection of Orchids is grown, and *Laelias*, *Cattleyas*, *Oncidiums*, &c., look well.

In connection with Orchids, the gardener, Mr. Pentland, relates that he has found it impossible to get sphagnum-moss to thrive, owing to the water of the district containing a large amount of lime; he therefore adopts a different mode of culture than is common. For most of the plants, leaf-mould containing a proportion of root-fibres has been used in the place of peat,

thus anticipating a practice that has been discussed in these pages recently; and as sphagnum-moss will not thrive, Mr. Pentland does not keep his plants above the level of the pot, but below it. He half-fills the pots with crocks, then plants the specimens at one side in the leaf-mould, and on the other side of the pot adds more crocks, until they and the surface of the leaf-soil are on the same level. He has found the plan to answer most successfully at present, and the matter of affording water to the roots is not attended with so much danger, for as only one-half of the crocks is covered with the leaf-soil, aëration from top to bottom is complete. M. Linden wrote in these pages on Feb. 22, in respect to a quantity of plants in leaf mould that he had purchased, "only living roots were in the sphagnum-moss over the surface of pots; in the earth they were usually rotten." At Ashwick leaf-soil is used, and no sphagnum or other moss. Especially healthy were the *Ocuidiums*, *Lælias*, and *Cattleyas*. At present this novel system, though tried on a small scale only, appears to satisfactorily compensate for the loss of the sphagnum-moss. We should mention that in the stove, *Aranja* (*Physanthus*) *albena* bore scores of fruits, some of which have been before the Scientific Committee, see *ante*, p. 198.

Ashwick is situate 3 miles from Box Railway Station, 9 miles from Chippenham, and 7 miles from Bath. Whether it be approached from Box or from Bath, the road is a very steep incline, and upon the top of the hill where "The Rocks" and Ashwick Hall stand, may be had most beautiful views of the valleys of Box and St. Catherine. The Box tunnel, that cost half a million of money and 100 lives to construct, is but a short distance away.

The drive from Bath is along an old Roman road through Batheaston and over Banner Down, where upon the side of the road three great stones mark the meeting of the three Counties, Gloucestershire, Somersetshire, and Wiltshire. P.

SPONTANEOUS SEEDING AND HYBRIDISATION OF NARCISSI.

I AM anxious to obtain information as to the gardens in Great Britain wherein *Narcissi* have been observed to seed naturally, and also of those wherein cross-bred or hybrid seedlings have spontaneously appeared. Of course, seedlings may be raised artificially anywhere if the flowers are hand-fertilised, or if different varieties or species are carefully cross-fertilised, à la Herbert, Leeds, or Engleheart; but I especially wish to know of localities wherein cultivated or naturalised *Narcissi* on grass, seed without any human assistance.

As I write, Mr. Bedford, of Straffan, Kildare, sends me flowers from seedlings that have appeared within the last few years, on the grass, where the common English Daffodil and the "Tenby" Daffodil are growing in proximity. They are intermediate in appearance, having the six-parted, flanged trumpet of "Tenby" (*N. obvallaris*), but of a paler gold, and the short perianth-segments are much paler, approaching more nearly to those of common English, or *N. pseudo-Narcissus*. *N. princeps* also seeds very abundantly on the grass at Straffan, but so far as I know, no hybrids between distinct species have appeared there.

At Kilmacurragh, in Co. Wicklow, seedlings have appeared, and these are apparently crosses between the dwarf Daffodil (*N. nanus*) and one of the white kinds, probably *N. cernuus*.

In the south of Ireland, spontaneous seedlings of Daffodils, both white and yellow, have long been known and appreciated by modern cultivators, although their origin as to time is quite unknown.

The late Dr. Charles Stuart, of Viola fame, had a very curious and interesting set of spontaneous seedling Daffodils in his garden, both single and double flowered.

It is also believed that the curious frilled trumpet Daffodil, called "Crom a Boo," came as a chance seedling amongst Ard Righ, and other yellow Daffodils, on the lawn at Croom, near Limerick; the same is true of many others, such as Countess of Desmond, Richard Boyle, Silver Bar, White Minor, Minnie Warren, Little Dot, and the double-flowered trumpet minor known as Rip Van Winkle, and the little double-flowered trumpet nanus of Dr. Stuart.

In an old Co. Wicklow garden, hybrid varieties, seemingly intermediate between the white-flowered *N. cernuus* and the yellow kinds, constantly occur, and the same is true in other gardens, where the borders are dressed and weeded with both care and discrimination.

It is now that *Narcissi* are being so extensively planted on grass-lawns and in pleasure-grounds, however, that the seedlings will have a better chance of survival. There is no doubt but that all the *Narcissi* are specially adapted for insect fertilisation, and that in this way the frequent intercrossing of various forms, and even of distinct species, now and then takes place, and seedlings in variety may be expected to appear on the grass wherever *Narcissi* are so grown. F. W. Burbidge, Dublin.

ALPINE GARDEN.

ANEMONE CERNUA.

IN reply to Mr. A. K. Bulley (see *Gardeners' Chronicle*, p. 233), I regret to say that I am unacquainted with the species here mentioned to which attention is directed. In my recommendations for nursing these imported plants—usually microscopic scraps—I hardly go so far as to say that planting in Cocoanut-fibre refuse is the only way of saving such plants alive. I do, however, say that some years ago the fact was so forced upon me that I could not ignore its value; and in the case of importations, its immense value. I first discovered the value of the fibre when receiving large lots of *Anemone alpina*, *Adonis*, *Cypripedium calceolus*, and other subjects of a like character each year in early autumn. Shorn of nearly every root, either by rough methods in collecting, or by decay during transit, I have, like Mr. Bulley, lost very valuable consignments by setting out the plants in the soil forthwith. These losses were often considerable and vexatious, and the value of the Cocoanut-fibre refuse was finally forced upon me, after having planted and lost a large batch of *Adonis* and *Anemone alpina* and *A. Pulsatilla*. As soon as the importation came to hand, I selected some of the best pieces and planted them forthwith, whilst the remainder were simply laid in the boxes, and firmly covered with the fibre. One box contained the smallest, the unsaleable pieces; and because of their little value, little notice was taken of them. When, however, the colder weather had departed, it was clear that the plants set out in the autumn were dead in every case; while the small scraps which had been fully exposed in the box of fibre were not only alive, but making quantities of roots—and so large a mass of them, that the plants

came out of the box in a compact mass of fibre and roots, and I could not further ignore the great lesson I had been taught. Doubtless the cold soil and rootless condition of those planted out were responsible for the failure of the others; while to the porosity, lightness, and comparative warmth of the Cocoanut-fibre was due the resuscitation of the quite small plants in the box. Not only did these survive, but the *Adonises* when seen by the late Mr. Robert Parker a year or two later had filled a large bed with such fine tufts, that he declared they were "the finest lot he had ever seen in cultivation." At this time the clumps would be 8 or 10 inches across, the larger roots fully 16 inches long, and the top growth nearly 2 feet high. These small plants were planted out in the month of April or May, and some sandy fibre was scattered in each trench. No doubt the potting, to which Mr. Bulley has referred, has kept the plants warmer and drier, hence his success, and it is significant that all those previously planted in the ground had failed. Where potting cannot be done, however, it will be found an easy matter to heel-in those imported pieces in Cocoanut-fibre refuse in shallow boxes in the manner described. It this manner many a valuable plant may be preserved alive. E. Jenkins.

BULB GARDEN.

NARCISSUS PETER BARR (WHITE AJAX DAFFODIL).

NEVER before has such a flower as this been submitted to the public gaze. Since N. Mmc. de Graaff came into being several white kinds have appeared, but Peter Barr among the Daffodils is like a *Maréchal Niel* or *Niphetos* among *Roses*—in other words, unique. It is hardly any good trying to describe it by comparison, for it is comparable to no other variety, either in the firmness of the flower, the great purity (whiter than the whitest *Ajax* of which I know anything), and its great size, length of corona and perianth alike. It is, perhaps, something like what one may have expected from two such parents—these, I am told by Mr. W. Barr, are *Monarch* and *Mmc. de Graaff*—both high-class, beautiful flowers, good ideals for present-day cross-breeders. In the reflexing rim of the trumpet, Peter Barr is less roundly recurved perhaps than *Mmc. de Graaff*, but in size and vigour it is very remarkable. The name of Peter Barr (Daffodil King) is hardly likely to wane, and if so, this white-winged giant will certainly do its share in the perpetuation of the name of one who has done yeoman work in the field of the Daffodil. The flower well merited the award of a First-class Certificate. E. H. Jenkins, Hampton Hill.

FORESTRY.

THE DISEASE OF LARCH.

(Concluded from p. 239.)

NOW, the cause of this sudden outbreak I attribute to wounds made on the Larch by hailstorms, or by the Larch-aphis or Pine-beetles, and at which wounds the Larch-fungus, *Peziza*, enters. According to Hartig and others, hail driven fiercely against the tender bark injures the latter, as also the aphis does in the case of the foliage and tender shoots. Wounds caused by these agents would be spread over almost every part of the tree, and the disease, in the form of blisters, might be expected to follow the wounds in the same order. My opinion is that the aphis is the *Peziza*'s "provider" in very many cases, but does not itself cause the

disease, because the aphid is quite common in dry seasons and on very dry soils, where it is not followed by the disease. Some other condition seems to be necessary, after the aphid has provided an entrance, to cause the *Peziza* to establish itself to a destructive extent. In the fine climate of Norfolk, the driest and sunniest in England, it cannot be excessive moisture that encourages the disease, though Hartig says a damp climate favours it. The only other plantation attacked to nearly as destructive an extent as the one in Norfolk was one I visited last autumn in Galloway, N.B. The woods were not all badly affected, but one in particular was, and the agent, who had been there many years, assured me that the blister first appeared on the trees all over

guish between diseased and non-diseased trees. For all kinds of railway and other fences, pit props, &c., blistered stems quarter girthing, 3 inches, are just as acceptable as any other. I saw last year a badly diseased Larch plantation in the South, twenty-five years of age, nearly all the trees of which were saleable. I advised the owner to fell and trim them, which he did, and is doing so now, and the price, I am told, will yield £25 per acre on high-lying, very poor land, unfit for farming purposes. That is £1 an acre at least annual rent in a rotation period of twenty-five years.

What soil has to do with the Larch disease is still a mystery. It is not at all certain that an ill-drained soil produces the disease. That

lings push up with extraordinary vigour, and growths are reproduced from old stools so rapidly that a second crop of poles and trees may be had within a very short rotation period. The young Larch on the same ground is quite free from disease, and their annual growth is exceptionally fine and clean. Old crops of Larch, recently felled, and planted within the memory of persons living, fetched in the final cut alone, not long since standing, over £300 per acre; at least, the proprietor of the estate and his agent showed me that £1700 had been got for 5 acres of Larch. The woods had not, of course, been as severely thinned as is usual, and the trees were exceptionally tall and cylindrical, which means measure.

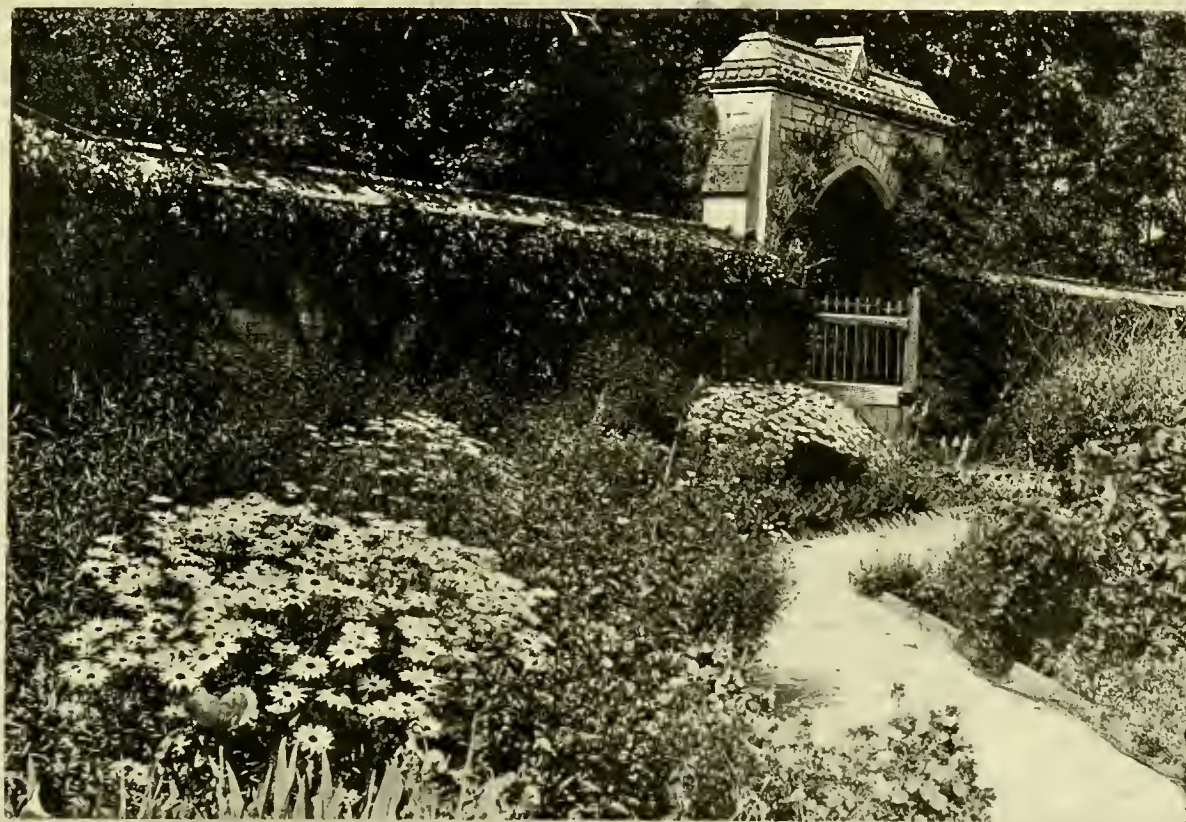


FIG. 81.—ASHWICK HALL: SHOWING THE FLOWER-BORDERS IN A WALLED-IN GARDEN CONTAINING THE GLASS-HOUSES.
(SEE P. 255.)

the wood about two years after a bad attack of the aphid, and had extended ever since.

According to Loudon, the Larch-blight (aphid) was at one time no more common than the disease, and first appeared in Scotland about a hundred years ago. Since then it has spread all over the kingdom, and the Larch-blight appears to follow in its wake.

Some of the worst cases of the disease are to be found on the borders of Somerset and Devon. Larch has been planted very extensively there within the last forty years, and on some estates the disease has practically destroyed the plantations. Trees of the size of young poles and rails are to be seen dead and dying in masses, and falling against each other—quite a pitiful sight. We have often wondered why owners of such woods do not cut them down and sell the timber for what it is worth. Timber merchants do not distin-

may cause heart-rot, but I have a conviction that abundant moisture in the soil is at least a preventive of the Larch-aphid. Drought, top or bottom, or both, certainly promotes the development of that plague. I understand that the chalk formation is one of the most retentive of water, which it holds in suspension, and does not give up by draining, like other formations. That is the experience of the London Waterworks authorities, and it is a fact that both the Ash and Larch thrive amazingly on the chalk. On certain estates in Wiltshire, not far from Tisbury, on the high-lying chalk downs there, are some of the finest Larch and Ash, both young and old, to be seen in England, both growing in or on pure chalk, which in that neighbourhood is in many places only the thickness of a sod from the surface, as can be seen in railway cuttings and quarries. On this formation young Ash seed-

Yet chalk by itself cannot be considered as anything but a poor soil, and unless it is the steady supply of moisture which it affords to the roots at all seasons, one is at a loss to understand why it produces such good and big Larch and Ash. The Ash is commonly supposed to prefer a deep, moist loam, but whether on the hard pan of chalk in Cambridgeshire or on the chalk downs of Wilts, it equals the best on any other soils; and the Larch seems to be a good companion tree under such circumstances.

I wish much that the *Gardeners' Chronicle* could collect information about the Larch-disease. What more interesting problem could engage the Scientific Committee? We are practically without data respecting its ravages in different parts of the country, and in different soils, situations, altitudes and aspects, &c. J. Simpson.

DOVER HOUSE GARDENS,
ROEHAMPTON.

THE new glass structures, which have been built by Messrs. McKenzie & Moncur, in Mr. J. Pierpont Morgan's garden are now completed, and furnished with plants. They consist of three elegant, span-roofed houses, and a corridor, and are connected with the older show-house by means of a door in the centre. In the corridor have been planted some choice flowering creepers and climbers, which may be expected to make the structure exceedingly attractive in the course of a year or two. One of the new houses will be used for the cultivation of Orchids, another one at present is filled with *Codiceums*, and the third, together with the corridor and the older show-house contains a very great variety of plants in flower. Conspicuous amongst these well-grown plants are *Acacias armata*, *Drummondii*, &c., *Rhododendron* (*Azalea*) *mollis*, *Lilacs*, *Genista fragrans*, *Cyclamens*, *Staphylea colchica*, *Richardias speciosa* and *Elliottiana*, *Cyclamens*, *Mignonette*, *Boronia megastigma*, *Ericas* (including *E. propendens*), *Wistarias*, *Hippeastrums*, &c. The new range forms a very pleasing addition to the features of the garden.

The Palm-house, which was built some three years ago, is now filled with very fine specimens, and provides an effect in the way of green foliage plants which was previously lacking in these gardens.

In the span-roofed house that formerly was filled with stove species, and in the adjoining division, the great specimen plants of *Souvenir de la Malmaison* *Carnation* are producing a few early blooms, and by their stout, glaucous, arching foliage promise as great a wealth of flower in May and June as formerly. There is not a sign of fungoid disease in the entire collection. Among other pretty effects in the plant-houses is that furnished by a first-rate collection of *Caladiums*, just having developed several leaves each.

In the fruit houses, as in all of the others, the condition of things in general, and in detail, is most praiseworthy. An extraordinary good crop of early Figs has afforded ripe fruits during the past three weeks. Strawberries are ripe; Peaches and Nectarines having passed the stoning stage are now swelling. Grapes from pot Vines are nearly coloured. A row of cordon Pear-trees, which was planted along the interior front of a long late Peach-case two seasons ago, are in blossom, and the proportion that will bear fruits during this second season promises to be unusually good. To induce this precocious fruiting, some of the varieties were "double-worked," or grafted on two stocks.

The grounds upon the south front of the dwelling-house have been made the very most of. The old shrubbery that once screened the road fence has been removed, and a narrow screen of Conifers put in its stead. The ground thus saved, with a little added thereto, has been turfed, and in the turf are informal beds of almost every shape and size. Mr. J. F. McLeod has managed to group into these beds a very large proportion of novelties in hardy shrubs. The *Mollis* *Rhododendrons* make a grand effect. Some of the beds contain the variety *Anthony Koster* exclusively. The white variety, *Daviesii*, is also grouped in beds, as is the very effective variety of *Prunus pseudo-Cerasus* known as *James H. Veitch*; *Lilies*, and some of the choicest border plants. The smaller beds are planted with bulbs in spring, and flowering plants later.

Mr. Morgan, who has lately arrived in Europe from America for his annual visit, has a keen appreciation for sterling quality, whether it be in a picture or in a garden plant. In conjunction with high quality, however, he admires neatness. P.

The Week's Work.

FRUITS UNDER GLASS.

By JAMES WHYTOCK, Gardener to the DUKE OF
BUCCLEUCH, Dalkeith.

Peaches and Nectarines.—The trees in the earliest house, the fruit of which is now swelling after stoning, should be afforded a higher temperature night and day, but letting it fall to 65° or 60° on very cold nights, and maintaining it at 80° to 85° with sunheat by day. Let the trees be syringed morning and afternoon, and keep the air moist. Although the young shoots may have been thinned, it will be necessary to push aside or take away any of the leaves that cover or shade the fruit from the light, and to press the fruit outwards from the lower side or back of the trellis. When fruit begins to ripen, the syringing of the trees must be stopped and air admitted constantly, a genial atmosphere being created by damping the paths and borders by day, and heat afforded at night.

The Succession Peach-house.—If the fruit is stoning, the mean temperature should not exceed 60°, and air more or less should be afforded by day. Let the trees be syringed twice daily, and remove gross shoots, so as to throw vigour into the weaker shoots. See to the thinning and adjustment of the shoots all over the trees, with a view to securing good fruiting wood. In order to secure ripe fruit in July and August, trees which have set their fruits freely may now have their first thinning. At this stage aphids are sure to be present on the shoots, and must be destroyed without delay, but as fumigation with any form of tobacco is not advisable at this stage, insecticides must be used instead, and a safe one is *Quassia-water*, or a weak mixture of *Bentley's Soft-soap*. The mean temperature should be about 60°, rising to 75° or 80° with sunheat. Syringe the trees in the early morning, and in the afternoon at closing time. See that the trees do not lack water at the roots, and if there are aged trees standing in the border sprinkle *Thomson's Vine Manure* on the latter, and afterwards apply tepid water. Failing *Thomson's*, apply diluted drainings from the cowsheds. Trees in the latest house, if in flower, must be afforded air constantly on sunny days by the upper ventilators or lights, but guard against draughts of cold air. As a help to the setting of the fruit, go over the trees about noon on fine days, and afford them a very gentle fine syringing. When the fruit is set, apply water to the inside border, and keep the house a little warmer.

The Orchard-house.—Plums, Pears, and Cherries being in flower or setting their fruit, now distribute the pollen in the middle of the day by giving a brisk tap to the stem of each tree. Plums that set freely in the open air always require aid under glass. Afford air constantly by the upper ventilators, and admit plenty by day in accordance with outside conditions; damp the house twice or thrice daily, and when the fruits are set sprinkle the border with artificial manure, and apply water. Keep a sharp look-out for aphids, syringing with *Quassia-water* of a suitable strength if any be noticed. Disbud the trees early, removing entirely all foreright shoots, pinching off all shoots found on the lower sides of the branches, and on the upper side leave the one which is nearest the base, one in the middle, and the terminal growth.

PLANTS UNDER GLASS.

By J. C. TALLACK, Gardener to E. MILLER MUNDY, Esq.,
Shipley Hall, Derby.

Ferns.—In many ferneries, it is impossible to keep insect pests under by vaporising with nicotine, as the fumes injure the young fronds, and sponging, too, is harmful to the plants, and where there are many plants it is impossible. A careful overhauling made weekly at this season, when the new fronds are pushing up, cutting out all old fronds that have lost freshness, is an excellent way of lessening insect pests, the eggs and immature insects

being got rid of; and the young fronds soon replace the old. This kind of work must be diligently carried out this month and next.

Selaginellas.—The common species *S. Kraussiana*, much used for groundwork in the fernery, in Palm-houses, &c., should be cleared away; a little additional soil afforded, and then be thickly replanted with the tips of about 3 ins. in length, dibbling these into the soil and afterwards applying water. Annual replanting is imperative where a good effect is looked for during the winter, the old plants being liable to fog off in patches during the winter and autumn. Other species of *Selaginella* should also be renewed now, and among others, *S. uncinata*, commonly known as *S. caesia*, and valued for its metallic-bluish tints, and *S. amoena* should not be overlooked.

Forced Plants.—Azaleas and other forced plants which may have been grown on in the glasshouses since flowering had ceased, should be removed to cold frames, shaded from very bright sunshine, and protected at night with mats, till they become hardened.

Epiphyllums.—These are most effective when grown as standards, and the present is a suitable season for grafting young cladodes growths upon to stocks of *Pereskia aculeata*, either by crown or side grafting. Grafted plants should be kept for a time in a moist and warm house till the union is complete.

Phyllocactus.—The flower buds on these plants will soon appear, and from this date until the flowers open, water should be very carefully applied, as an overdose will, unless the drainage is quite perfect, cause the buds to turn yellow and drop off. A dryish intermediate-house and full exposure to the sun suit these plants.

Clivias.—From now onwards through the summer months, *Clivias* require a good supply of water at the root. The plants are very effective when planted out so as to form a margin to the beds in the Palm-house or conservatory, in which position they flower better than one would expect. On no account should much water be afforded during the autumn and winter months, or loss of the leaves will be sure to follow.

Gesneras.—A batch of tubers should now be potted and placed in the stove to start them. *Gesneras* succeed in a mixture of turfy loam, peat, and much sharp sand, and the tubers should be covered with about 1 inch of soil. Afford them a moist atmosphere, but no overhead syringing, and shade the growing plants when the sun is strong.

THE ORCHID HOUSES.

By W. P. BOUND, Gardener to J. COLMAN, Esq., Gatton
Park, Reigate.

Ventilation.—The amount of ventilation that should be afforded depends upon the elevation and style of the house, also upon the surroundings, whether these are conducive to the free circulation of air or otherwise. All Orchids require fresh air, and the question as to whether sufficient is being afforded, is equivalent to asking whether or not the air in the house is pure and sweet. It is not correct to assume that because an Orchid requires to be kept hot, less fresh air is necessary for it than for others. Very great care must be exercised in keeping the atmosphere in the hothouses sweet. In the *Cattleya* and cooler houses, little difficulty will be experienced in keeping the atmosphere sweet and buoyant.

Affording Water.—By discriminating between plant and plant, many young roots may be saved to help to develop the new growth. The operation should be carried out early in the day, so that the plant may become partially dry before night. Plants that are growing and rooting freely, and whose roots have penetrated the entire compost, will require water more frequently than those that are newly potted, or those that have very few roots. Speaking generally, a plant will root more freely when kept on the dry side; then, when it has made many roots, afford

water more freely. Where Fern rhizomes are used in the place of crocks for drainage, less water will be required at all times.

Damping-Down.—The amount of the damping-down required in any one Orchid-house will vary from day to day, in accordance with the weather, more moisture being required when the outside atmosphere contains but little humidity—in fact, in very bright weather it is not possible to afford too much during the early and middle hours of the day; but the probable kind of conditions at night must be estimated before damping-down heavily late in the afternoon, otherwise there may be an excessive amount of condensation on the glass as the temperature declines, which will cause dryness of the air—a very injurious condition, against which the gardener must always be on his guard.

Syringing the Plants may only be performed with safety on some species on bright, clear days; whilst *Disa grandiflora*, *Epidendrum radicans*, most of the *Odontoglossums*, *Spathoglottis*, many of the *Cypripediums*, *Cymbidiums*, and *Sobralias*, are benefited by being syringed whenever the house temperature is right, using discretion as to the time of day when the days are short, or the weather very dull, when very little overhead syringing will suffice, and that should be performed sufficiently early to allow the leaves of the plants to become dry before nightfall; whilst during bright, warm weather, these same species may be frequently syringed with advantage. Overhead syringing should only be practised with *Dendrobiums*, *Cattleyas*, *Masdevallias*, *Zygopetalums*, *Lycastes*, and *Vandas*, on bright days, and then only when in growth, and very lightly, so that no water runs into the centre of the plant or of the pseudo-bulbs. The syringe should be fitted with one of the patent spraying nozzles, which deposits water as fine as dew. *Laelia anceps* is an Orchid that when growing should be syringed overhead several times a day, and once rather late in the afternoon, commencing to do this about the third week in April, and continuing to do this till growth is almost finished.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bickton, East Budleigh, Devonshire.

Disbudding Fruit-trees.—In some parts of the country Peach and Nectarine trees will be sufficiently advanced in growth for disbudding to be undertaken. This operation must be effected gradually at intervals of six or eight days, or a check will be given to the trees. Disbudding is best performed with the finger-and-thumb, in fact no growth should be allowed to remain long enough as to require a knife for its removal. The current season's fruiting wood of a foot or more in length should be furnished with three shoots, two at the base and one midway, and of course the points of the shoots, unless the shoot has filled its allotted space, when the lead should be pinched at the third or fourth leaf. When going over the trees for the last time, the one growth on the upper side of the shoot at the base is usually the one to be retained, unless a more than usually large space has been left between the main fruiting wood, when the midway shoot may also be retained; crowding must be avoided as being detrimental to the ripening of the wood. In the case of young trees, it will be necessary to reserve more shoots for extension and as a basis for the crown, though these should be laid in from 3 to 4 inches apart. Maiden or one-year-old trees from the bud growing on the reserve wall, which were cut back as advised in a previous calendar, will now be growing freely, and the leading shoot may be secured, training it erect; and others that push out below should be trained to the right and left, allowing a space from 4 to 6 inches between them, surplus shoots being rubbed off whilst quite small. Do not be in too much haste to fasten-in these shoots, growth being much stronger if they are allowed to grow unrestrained for a month or longer time. Pinch lateral shoots at

the first joint on the bearing shoot, and if the latter should be growing too rapidly for the good of the side shoots of the tree, its point may be pinched out when 18 inches of growth have been made. Whilst cold winds prevail, aphids is almost sure to increase its numbers, and dusting with tobacco-powder will be constantly called for.

Apricots.—Continue to thin the fruits of the Apricots if the set has been very abundant, reserving most of those that are taking the lead, and thin these the last of all. As soon as the weather becomes milder, remove netting or other protective material from Apricot-trees, but allow glass or other kinds of coping to remain for a fortnight longer, otherwise a check may be given to the growth of the trees and the fruits. I would remind gardeners of the need to examine the stone-fruit-tree borders, and if the soil be found at all dry, to afford water copiously and in the early morning hours.

THE FLOWER GARDEN.

By R. DAVIDSON, Gardener to EARL CADOGAN, Culford Hall, Bury St. Edmunds.

Schizostylis coccinea.—The tufted bulblets of this having commenced to grow, it is a suitable time to plant or replant them. Where this useful winter-flowering plant is grown extensively, it should be given a slightly elevated bed on a south or south-east border, using a compost consisting of sandy loam two-thirds, mixed with leaf-mould one-third. Plant in beds of 4 or 5 feet wide, with 18-inch alleys between, in drills drawn at 10 inches apart and 4 inches deep. The large bulbs are those that will produce flowers the current year, and these should be put in at 4 inches, and the smaller bulbs at 2 inches apart. Fill in the drills, and press the soil firmly with the back of an iron rake, with which the surface may be made smooth and even.

Rock Plants.—The alpine species of Campanula require the protection of a cold frame during the winter and spring months, and if duly hardened off, any that have been so wintered may be now planted in the rockery. *C. pumila alba*, *C. Waldsteiniana*, and *C. Portenschlagiana* are amongst the prettiest of these, succeeding in any ordinary kind of soil. Water must be afforded the plants when the weather is dry. The Edelweiss is another little plant that is the better for cold-frame protection throughout the winter, and if planted out now in well-drained soil on the rockwork, it will produce its quaint-looking flowers freely from midsummer till early autumn. The plants are easily raised from seeds, which is the best method of raising them. Sow at present date or early in the autumn, and grow on in boxes or pots in any exposed position in the garden. *Oenothera speciosa rosea* is also a charming free-flowering subject, and my experience with it so far, is that it requires cold-frame treatment in the winter. This plant thrives equally well if planted in a dry, sunny position in the front of the herbaceous borders.

General Remarks.—All half-hardy annuals which were sown a fortnight ago in frames will require the utmost care, the changeableness of the weather rendering the carrying out of the necessary details of this kind of work rather harassing as regards ventilation, affording water, and shading from strong sunshine. The hardening-off treatment of the numerous species and varieties of summer-bedding plants will also occupy the mind of the gardener; it is work that requires considerable forethought, as well as entails much labour and time in the forming of shelters, temporary or otherwise, for the protection of the plants from cold winds at all times, and frosts by night, especially if the gardener is not well supplied with cold frames. Pelargoniums, Fuchsias, Abutilons, and the like, are plants that are not improved by leaving them in forcing-houses after the foliage of the trees, Vines, &c., has developed. *Humea elegans* and specimen zonal Pelargoniums are plants that must also be afforded a cool, airy

position, and all must have ample shade afforded them for at least ten days after their removal from the warmer houses. All plants that require it should have water applied before 11 A.M.

THE KITCHEN GARDEN.

By T. TURTON, Gr. to J. K. D. WINGFIELD DIGBY, Esq., Sherborne Castle, Dorset.

Peas.—The demand for this vegetable being greatest in the month of July, sowings of the best varieties of Marrowfats should be made weekly till the middle of the month of May, and afterwards the sowings should consist of only such varieties as are known to yield well in the autumn, of which smaller quantities may be sown. Let the sticking of successional crops be attended to directly the plants are 4 inches high, as with seasonable weather the plants will grow apace, and they should not be allowed to grow up through the wire Pea-guards, or into the thread put to defend the Peas from the birds. If sparrows and other feathered foes peck the leaves after the rows are stuck, dust the plants with air-slaked lime and fresh soot mixed together in equal proportions, repeating the dressing if rain should wash it off. Peas on light gravelly soils should be mulched with partially rotted stable-manure, but on retentive soils mulching should be deferred till more warmth has been imparted to the soil.

Onions.—As soon as the plants have come through the soil and the lines can be made out, let the Dutch-hoe be used, and thus check the growth of weeds and aerate the soil. Seed of the silver-skinned Onion for pickling purposes may now be sown on poor soil, so as to avoid the production of large bulbs, sowing thickly.

Capsicums.—Seeds may be sown forthwith in pots or pans, placing these in a hot-bed, and pricking them off in boxes after a few true leaves are made. When of a height of 4 to 6 inches, plant them in the frames that have been in use for forcing Potatoes, where they will give better results with but a tithe of the labour required when grown in pots.

Lettuce.—The varieties of Cabbage-Lettuce sown in skeleton-frames on warm borders early in February should be thinned to about 6 inches apart, the thinnings being planted out on a sheltered border, and some in the open quarters. Make a sowing at this date of the Paris White Cos and some large-growing Cabbage-Lettuce for setting out upon the ridges between the rows of Celery.

Turnips.—The early sowings being rather uncertain, it is advisable to make small sowings at intervals of ten days or a fortnight in different parts of the garden, taking early precautions against attacks of the Turnip-flea, by means of dressings of air-slaked lime and fresh soot in the early morning hours. Let the early sowings be chopped out with a hoe, but do not thin finally till the plants are safe from the flea. Early Milan and Early Snowball are excellent varieties to sow at the present date.

EMIL RODECK.—Many persons in this country will learn with regret of the death on April 5, at the age of sixty-nine years, of Herrn EMIL RODECK, head of the firm of RODECK BROTHERS, dealers in objects of fine art, fancy goods, and manufacturers of Russia leather—a genial man and a charming host. The deceased was an ardent horticulturist, indeed, one of the first amateur gardeners in the Austrian metropolis, growing stove plants (*Croton Rodecki*), hardy plants, Roses, and florists' flowers; and he was the possessor of a very choice collection of Orchids at a period when these plants were little known or appreciated in Austria. Herrn RODECK was the recipient of numerous decorations and titles, being, among others, Knight of the Franz Josef Order, Royal and Imperial Councillor of Commerce, Knight of the Order of the Crown, IV. Class, and of the French Legion of Honour.

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 thankfully receive and 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 THE ENSUING WEEK.

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| TUESDAY, APR. 22 | Royal Horticultural Society's Committees Meet. National Auricula and Primula Show, at Drill Hall, Westminster. |
| WEDNESDAY, APR. 23 | Royal Horticultural Society's Examinations in Horticulture. Royal Botanic Society's Show of Spring Flowers. |
| THURSDAY, APR. 24 | Midland Daffodil Society's Show at Birmingham (2 days). |
| FRIDAY, APR. 25 | Darlington Horticultural Society's Spring Show. |

SALES FOR THE WEEK.

MONDAY, APRIL 21—Roses, Ferns, Bulbs, &c., at 67, Cheapside, by Protheroe and Morris, at 12.
TUESDAY, APRIL 22—Roses, Palms, Davallias, Japanese Maples, at Pollexfen and Co.'s Rooms.
WEDNESDAY, APRIL 23—Liliums, Palms, Bulbs, &c., at 67, Cheapside, by Protheroe and Morris, at 12.—Palms, Flowering Plants, Japanese Dwarf Trees, Davallia Bullata in fancy pieces, &c., at Stevens' Rooms.
THURSDAY, APRIL 24—Palms, Roses, Davallias, Japanese Maples, Bulbs, &c., at Pollexfen and Co.'s Rooms.
FRIDAY, APRIL 25—Established Orchids in great variety, at 67, Cheapside, by Protheroe and Morris, at 12.30.—A large and splendid collection of Orchids, &c., in the Coal Exchange, Market Place, Manchester, by Mr. John Cowan, 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 —49° 3'.

ACTUAL TEMPERATURES:—

LONDON.—April 16 (6 P.M.): Max. 59°; Min. 46°.

April 17.—Foggy.

PROVINCES.—April 16 (6 P.M.): Max. 57°, Home Counties; Min. 46°, N.E. Scotland.

THE more we have to do with botanical, i.e., scientific names on the one hand, and with popular or with garden names on the other, the more convinced we are of the desirability of using names for the one purpose for which they are really designed, and for no other. A name should be used as a means of distinction, a mere label, and nothing else; just as we say JOHN and THOMAS without any attempt to differentiate between the two persons. Directly we begin to make the name significant by conveying some information about the nature of the plant, its history, its native place, or what not, so soon do we begin to pile up confusion and trouble for the future. To-day we call a plant *Narcissus maximus*, to-morrow we find a bigger one. Our predecessors called one plant *biflorus*, where we find it to be one-flowered only, or perhaps three-flowered. To-day we receive a plant from China, and we call it "*Novicia chinensis*;" next week we ascertain that our supposed novelty is none other than the *Annosa himalaica*, now found to occur also in the Himalayas. We might give countless instances of this character, but we do not desire to weary the reader with such technicalities. We only plead

that the names used in gardens, for garden purposes only, should not be Latinised until their validity has been attested by some competent authority. Till that time, provisional names in the vernacular should be used. Moreover, those provisional names should not be cast in such a technical form that the unwary may be deluded into the notion that the plant is a duly registered member of society. Even if a "garden name" be applied, it is much better not to make it imply anything beyond the separate identity of the plant to which it is applied. PAUL JONES & Co.'s "Earliest-of-All" Marrowfat Pea is almost sure to be superseded next year by PETER SIMPLE BROTHERS' "Earlier-than-the-Earliest." But if the one were called "Paul Jones," and the other "Peter Simple," or any other arbitrary appellation, no confusion would arise. Moreover, such names need not be changed, whilst the botanical names must needs vary according to the progress of science, increase of knowledge, and differences of interpretation.

When names are borrowed from foreign sources, additional complications ensue. An old and valued correspondent calls our attention to the Rose *Félicité-Perpétue*. This name has often been the subject of discussion, and the name is variously spelt in our catalogues. Our only consolation is to find that French rosarians themselves often differ in their practice with regard to the spelling of this name. Now, however, we have the happiness of being able to extricate ourselves from the confusion occasioned by this name; and thanks to our excellent *confrère*, M. ANDRÉ, to offer a reasonable explanation. If we can only remember this, it will save us from the difficulty in future. But, first of all, we will let our "very old," and, we may add, valued subscriber speak for himself.

"I notice almost, if not quite all the English Rose-catalogues call a well known Rose '*Félicité Perpétue*,' and am puzzled. *Félicité* is a feminine substantive, surely the adjective should be '*perpetuelle*?' *Perpétue* is nonsense; no one would use a second person singular in the imperative mood conjoined to a plain substantive to make a name. We often laugh over the mistakes of our continental friends with regard to our mother tongue. Are we able to throw a stone at them when we use so ridiculous an appellation for a French Rose, alike unmeaning and ungrammatical?"

"But we equally sin with German; perhaps to compensate our French blunder, and show how impartial our ignorance can be. All the catalogues I have seen, with one notable exception, give the Rose *Grüss aus Teplitz*, a greeting from, or out of, Teplitz, as *Grüss an Teplitz*; again a blunder, and one ignoring that the name really denotes the place of origin of the Rose.

"Why should we thus expose our ignorance in such ordinary matters, and make ourselves a laughing-stock to the world?"

Now, here is the history of the name *Félicité-Perpétue* :—

"*Félicité et Perpétue*, raised in 1827 by JACQUES, head gardener at Neuilly (Seine), as a seedling variation from *R. sempervirens*. The origin of the name is as follows :—*FÉLICITÉ* and *PERPÉTUE* were two Christian ladies who suffered martyrdom together in 203. Their names are always associated in the martyrology of the Saints. You may consider this information as exact. ED. ANDRÉ."

In ordinary usage, the connecting particle *et* is omitted, and the two names are placed in apposition, thus: *FÉLICITÉ PERPÉTUE*. The latter word should thus always be written with an initial capital, and if a hyphen is placed between the two names, so much the better. How it is that the two martyred ladies had such modern-looking French appellations in the year 203 it is for philologists to determine. Enough for us to have a reasonable explanation of a hitherto perplexing name.

TRAINED PELARGONIUMS AT GUNNERSBURY HOUSE (Supplementary Illustration).—The head gardener at this place, Mr. J. HUDSON, is a very successful cultivator of the fragrant-leaved species of *Pelargonium*, of which *P. Radula*, a much-branched balsamic-scented plant; *P. fragrans*, the Nutmeg-scented; *P. quercifolium*, *P. capitatum*, a plant yielding an essential oil on distillation, which is employed in perfumes; and *P. abrotanifolium* are types. These were once much more frequently met with in gardens and appreciated than is the case at the present day, being cultivated in the greenhouse for use in the dwelling, and as window plants. Their scent is varied and pleasant, and it is imparted on being lightly touched, or the plants shaken by the wind. As decorative plants in the open, few of them have much floral value, although a few of the hybrids, such as *Touchstone*, *Prince of Orange*, *Rollisson's Unique*, and *crubescens*, that were used in bedding arrangements forty or fifty years ago, were showy, and their flowering season endured for three or more months. A large collection of these Cape species exists at Gunnersbury House, and many of the plants have been seen at the Temple shows of the Royal Horticultural Society. Mr. HUDSON finds that the plants, which he employs in the town houses of his employers, Messrs. ROTHCHILD, in room decoration, suffer scarcely at all from dust, heat, the fumes of gas, or from a confinement of fourteen days' duration. In the summer and early autumn, many of the finer specimens are placed on the terrace at Gunnersbury House, and during the winter and spring they find a home in some of the glasshouses at that place. The subject of our illustration measured about 10 feet in width, and there are several others as large, as well as some of columnar form, measuring 6 to 8 ft. in height, representing the labours of a dozen years. The plants are not pinched or pruned, but the shoots trained in as they lengthen. An extensive collection of these plants also exists at Kew and at Chiswick.

ROYAL HORTICULTURAL SOCIETY.—At the Royal Horticultural Society's meeting to be held on April 22 in the Drill Hall, Buckingham Gate, Westminster, special prizes will be offered for Daffodils, open to amateurs and gentleman's gardeners only. First prize a 7-guinea Silver Cup (presented to the Society by Messrs. BARR & SONS), second prize R.H.S. Silver Flora Medal. Group of Daffodil-blossoms, grown entirely outdoors (*Polyanthus* varieties excluded), must include some of each section, viz., *magni*, *medii*, and *parvi-coronati*; must contain at least thirty varieties distinct, at least three blooms of each must be shown. Not more than nine blooms of any one variety may be put up. To be staged in bottles, vases, or tubes, not exceeding 3 inches in diameter at the top (inside measurement), and all the stems must touch the water. The quality of the flower will count more than quantity, and correct naming and tasteful arrangement will be duly considered. Any

hardy foliage may be used, Daffodil or otherwise. No prize will be awarded unless there are three competitors at the least. Entries should be addressed to the Secretary, R.H.S., 117, Victoria Street, London, S.W.

— The National Anricula and Primula Society will hold its annual show at the same time and place; and a lecture on "Campanulas" will be given by Mr. M. PRICHARD, F.R.H.S., at 3 o'clock.

— The Society's examination in horticulture will take place on Wednesday, Apr. 23, at various centres throughout Great Britain. Intending candidates are requested to forward their entries at once to the Secretary, Royal Horticultural Society, 117, Victoria Street, London, S.W.

NATIONAL ROSE SOCIETY.—A meeting of the General Purposes Committee will be held at the Rooms of the Horticultural Club, Hotel Windsor, Victoria Street, Westminster, on Tuesday, the 22nd inst., at 2 P.M.

THE WARWICK CASTLE CONFERENCE.—The Conference on the Co-ordination of Rural Industries, which was to have been held at Warwick Castle on May 1, has not been abandoned, but is postponed until later in the year. Details of the proposed programme may, however, be obtained from the Warden, Lady Warwick Hostel, Reading; and it is hoped that all those interested in the subjects for discussion will write for particulars.

DR. AUGUSTINE HENRY.—With reference to the condensed report in our last issue of Dr. HENRY'S speech at the Horticultural Club, that gentleman desires us to make a correction. He did not, as was there stated, receive his education at Oxford University; and the story which he told of the views of an undergraduate on the political institutions of ancient Athens was not meant to be a criticism of classical education as such. Mr. HENRY merely intended to point out that for explorers and travellers to do good work a previous training in natural history was essential; and that we have been too much dependent heretofore on amateurs for our knowledge of such regions as the interior of China.

"BOLETIM DA SOCIEDADE BROTERIANA."—The first fascicles of the eighteenth volume comprise a paper by Prof. FLAUAULT on the names to be given to geographical areas distinguished by special groups of plants, according to varying conditions of soil and climate. M. COUTINHO has a monograph of the Campanulaceae of Portugal, which will be very serviceable to students of this Order. There are numerous other memoirs interesting to students of Portuguese botany.

AUCTION SALE ROOM NOTES.—The unserved sale of Orchids from the Rev. F. PAYNTER'S collection at Messrs. PROTHEROE & MORRIS' Central Sale Rooms, Cheapside, was well attended, and good prices were realised throughout. *Cypripedium* Mrs. E. V. Low fetched 36 guineas, *C. Lawrenceanum* Hyeanum 30 gs. and 40 gs., *C. insigne*, Harefield Hall variety, 32 gs. and 22 gs.; *C. insigne* Luciani 26 gs., *Cypripedium* × *Olivia* 16 gs., *Odontoglossum Vuylstekeanum* 40 gs., *O. crispum* Heatonense 36 gs., *O. e. magnificum* 20 gs., *O. × excellens* 27 gs., *O. crispum* Brilliant 24 gs., and other plants at good prices. Among the plants in flower or bud sold at 2 P.M., as is the rule, were *Cypripedium bellatulum* album, a strong plant, 51 guineas; *Odontoglossum*, spotted variety, 50 gs.; *Cattleya Schroderae*, fine form, 25 gs.; and *Cypripedium Chamberlainianum*, 10 gs.

"BOTANICAL MAGAZINE."—The April number contains coloured figures and descriptions of the following plants:—

Philodendron calophyllum, Brongniart, t. 7827.—A "stemless" species with stalked, oblong, entire leaves, each 2 to 3 feet long, in tufts. The midrib is very thick. The spathe, 6 inches long, is raised on a long stalk, convolute at the base, expanded above, white externally, rich carmine internally; spadix as long as the spathe, ivory-white. Native of Guiana.

Viscum cruciatum, Sieber, t. 7828.—Parasitic on the Olive. It is like the common Mistletoe, but the berries are reddish. Native of Spain, N.E. Africa, and Syria. Kew.

Tupistra grandis, Ridley, t. 7829.—The short stem bears a number of lanceolate recurved leaves, each 2 to 3 feet long. The flower-spike is stalked, and emerges from the stem near the base. It bears numerous closely packed, reddish-brown flowers, each about $\frac{3}{4}$ inch long, with a cylindric tube, and a recurved, six-lobed limb; the style is white, protruding beyond the perianth, and terminating in a large, disc-like stigma. Native of the Malay Peninsula.

Corydalis thalictrifolia, Franchet, t. 7830.—A Chinese perennial with coarsely divided leaves, and spikes of yellow flowers, each about 1 inch long. According to the statements in the text, the name *thalictrifolia* is pre-occupied. Kew.

Kalanchoe somaliensis, Hooker, t. 7831.—A native of Somaliland, where it was found by Sir EDMUND LODER. It is a succulent shrub, with sessile, oblong, crenulate leaves, and loose terminal cymes of flowers. Each flower is erect, $2\frac{1}{2}$ inches long, with a short five-lobed calyx, and a very long slender corolla tube, white, expanding into a four-lobed spreading limb.

BARK.—The *Timber Trade Journal* is answerable for the statement that the prospects of the bark trade are improving. It is expected that £4 a ton will be realised instead of 50s. Chemical substances do not produce such good leather as the bark does, as purchasers are beginning to find out, and the requirement of best leather have been greatly increased by the S. African War.

"THE COUNTRY."—The second number of our new contemporary is before us, and the contents include a portrait of Sir EDWARD GREY, Bart.; illustrated papers on Elstow and JOHN BUNYAN, by the Rev. A. J. FOSTER; Spring Trout Fishing, by R. B. MARSTON; The Garden of Canon ELLACOMBE at Bitton; Daffodils, by the Rev. G. H. ENGLEHEART; The Language of Birds, by E. K. ROBINSON; Bird Haunts, by HELEN MILMAN; and various shorter articles and notes. As we before stated, the editor is Dr. H. ROBERTS; and the magazine is published by J. M. DENT & Co., Bedford Street, W.C.

COLONIAL FRUIT.—The Orient and P. & O. Companies have received information from Sydney, advising the following shipments of fruit, viz., per Orient Co's. *Orotava*, due in London about May 10, with 25,000 boxes; per P. & O. Co's. *Britannia*, about May 17, with 17,500 boxes; White Star Co's. ship, *Afric*, 17,000 boxes, including 4,000 boxes for Liverpool; G. THOMPSON & Co's. *Salamis*, with 8,600 boxes.

MONARCH OF THE EAST.—The plant which is parading under this title, and said to come from Central Asia, is the well known *Saurumatum guttatum*, an Aroid which is a native of North-west India and of the Bombay Presi-

dency, and is an old garden plant, having been frequently introduced. A good figure of it will be found in the *Botanical Magazine* at t. 4465. The spathe is very long, and handsomely spotted and bordered with rich purple-brown on a yellowish ground. The odour, however, is anything but agreeable. If kept from frost and damp in the winter, it may be planted out-of-doors in a shady place.

FORESTRY.—The *Timber Trades Journal* says that for colliery purposes alone we import from France and other countries at least a million tons of timber, that might just as well be grown in this country.

"KERNER'S NATURAL HISTORY OF PLANTS."—Messrs. BLACKIE AND SON, contemplate a re-issue of KERNER'S *Natural History of Plants*, a work which, in its English form, is identified with the name of Prof. F. W. OLIVER. The new edition, which will be issued at a considerably reduced price, will be substantially a reprint of the original English edition, with a few necessary alterations and corrections.

A WILD GARDEN AT UNDERLEY.—A new "wild" garden has just been planted at Underley Hall, the residence of Lord and Lady HENRY BENTINCK. A list of the plants used includes about 800 species and varieties, made up as follows: 189 alpine, 53 bulbs, 49 aquatic, 47 Roses, 250 herbaceous, 91 deciduous trees and shrubs, 76 evergreen trees and shrubs, 14 Ferns, and 37 annuals. The numbers of each variety vary from one to some hundreds. The work has been done by Mr. W. A. MILLER, his Lordship's gardener.

ROYAL GARDENS, KEW.—We regret to find that our editorial note last week was mis-read by a number of gardeners out of a situation and desirous of finding some other appointment. As was obvious from the heading, the note referred exclusively to young gardeners desirous of getting employment in the Royal Gardens at Kew. Such persons should apply to the Curator for a form of application, of which we append a copy.

— "Applicants for admission as gardeners into the Royal gardens are furnished with (a) paper, which when filled-in must be signed by their present or last employer, and returned to the Curator, accompanied by a letter in applicant's own handwriting and with testimonials from employers or practical gardeners. Foreigners must be able to write and speak English. The wages are 21s. for gardeners, and 27s. for sub-foremen per week, with extra pay for Sunday duty. Applicants must be at least 20, and not more than 25 years of age, and have been employed not less than five years in good private gardens or nurseries. They must be healthy, free from physical defect, and not below average height. Whilst at work they must wear blue serge suits and grey flannel shirts with turned down collars. The applicant will be informed if his name has been entered for admission, and on a vacancy occurring will receive notice to that effect. Should he not be appointed within three months, the application must be renewed."

HYBRID VINES.—The plants resulting from crossing two entirely distinct species are habitually sterile; or if fertile, the degree of fertility is very limited. The species of *Vitis* form a most remarkable exception to this rule. M. MILLARDET* has succeeded in fertilising among themselves fifteen species of this genus, and, a most important fact, all the hybrids obtained are fertile and mix freely, the Vines bearing themselves as in nature.† The various genera of one family, the different species of the same genus present, further, great differences as regards aptitude to combine by cross fertilisation. *Bull. Soc. Bot. France*, xlvii., 1899, p. cxc.

* Millardet, *Essai sur l'Hybridation de la Vigne*, p. 5. (Paris, G. Masson, 1891.)

† P. Viala, *Une Mission Viticole en Amérique*, p. 170 et suiv., 1899.

GRENADA AGRICULTURAL SOCIETY.—We congratulate the Grenada Agricultural Society on a highly successful annual exhibition held by them in Queen's Park early in February. The weather was favourable, and there were numerous entries in the various classes, and a large attendance of interested visitors.

"THE FRUIT TRADE NEWS" is devoted to the interest of fruit growers and salesmen. The articles are short and serviceable.

PUBLICATIONS RECEIVED.—*Some Australian Food-adjuncts*, by J. H. Maiden. From *Agricultural Gazette of N. S. Wales*, Dec., 1901. — *Agricultural Gazette of N. S. Wales*, January. This includes articles on Useful Australian Plants, No. 75, a Peppermint (*Eucalyptus piperita*); *Eucalyptus*-trees and the Bee-keeper, by J. H. Maiden; Eradication of Prickly Pears, by Geo. Valder, and various other papers connected with agriculture. — *Queensland Agricultural Journal*, February. This includes lessons in agriculture, and papers on such subjects as dairying, poultry, the orchard, and tropical industries. — *Agricultural Bulletin of the Straits and Federated Malay States*, edited by H. N. Ridley, February. Contents: Timbers of the Malay Peninsula (continued), Annual Rings in Timber, *Ficus elastica* in Malacca, and Para Rubber in the Straits Settlements. — From the Royal Botanic Gardens, Ceylon, come the following circulars: *Helopeltis* (Mosquito Blight), by E. Ernest Green, April, 1901; *School and other Gardens, and how to Plant them*, by John C. Willis, July, 1901; *Cacao Canker in Ceylon*, by J. B. Carruthers, October, 1901; *Camphor*, by M. Kelway Bamber and J. C. Willis, November, 1901; and *Mosquitoes and Malaria*, by E. Ernest Green, December, 1901. — *Sunset*, a Magazine of the Border, February (published monthly by the S. Pacific Co., Montgomery Street, San Francisco, Cal.). Contents: Luther Burbank, man, methods, and achievements; and various popular articles and notes. — *Catalogue of Colorado Wild Flowers*, D. M. Andrews, Boulder, Colorado, U.S.A. — *Bulletin de la Société l'Avenir Horticole*, Année 1901. Place du Commerce, 13, Ghent. Motto of the Society: "Heureux les peuples qui consacrent toutes les forces au développement de l'Agriculture et de l'Horticulture," Ch. Baltet. — *Quarterly Leaflet of the Women's Agricultural and Horticultural International Union*, No. 9, March. Contains information, in parallel English and French columns, upon the industries indicated by the title. — *Annual Report of the Public Gardens and Plantations, Jamaica*, for the year ended March 31, 1901, by W. Fawcett, Director. Since last spring special steamers have brought fortnightly to Bristol consignments of Bananas and other goods, about 20,000 bunches of the fruit being carried each time. A larger steamer and a weekly service will be started if the trade develops further. Other crops were satisfactory, and the reports from the several gardens and plantations are favourable. — *The Journal of the Board of Agriculture*, March. Contents: British Crops of 1901, Seeding of Grain, by J. Speir; Purchase of Artificial Manures, Growth of Hops, by A. D. Hall; Cultivation of Maize for Fodder, English Coppices (Part II.), by J. Nisbet; Imports of Agricultural Produce in 1901. — *Curtis's Botanical Magazine*, April. Tab. 7827, *Philodeudron calophyllum*; t. 7828, *Viscum cruciatum*; t. 7829, *Tupistra grandis*; t. 7830, *Corydalis thalictrifolia*; t. 7831, *Kalanchoe somaliensis*.

HOME CORRESPONDENCE.

DUAL PERFUME IN FLOWERS.—At p. 248 in last week's issue of the *Gardeners' Chronicle*, a correspondent, "Tilia," makes enquiries concerning this interesting subject. Whether it could be substantiated that any plant really gives off two distinct scents at different periods may be open to doubt, but there is no doubt that some flowers do emit more than one decided perfume. At the moment nothing occurs to me more forcibly than some species of *Muscari*, and I would name *M. conicum* especially. This, to my sense of smell, contains all the combined scents of an old-time cottage garden nosegay, that would of necessity include Gilliflower, Southernwood, Stocks, and such things. Taken into a warm room this deliciously fragrant mixture is, I think, increased, and whatever it may be in fact, it is without doubt a most agreeable, fascinating odour. In the same species there is not wanting that touch of spicy aroma that is usually admired and coupled or combined with what else may be there, makes a most agreeable whole. Not all the species of *Muscari* are similarly endowed, though some possess their own distinctive perfume. And therefore I think "Tilia" may well study the group. *M. azureum* = *Hyacinthus ciliaris* has scarcely

any perfume, and what there is, to me, is not agreeable. *M. moschatum* is well known, and the *M. botryoides* set have a delicate, quite distinct perfume. There is something very spicy in the best scented so-called Clove Carnations, and of course *Hyacinthus* is remarkable for strong, if not dual-scented flowers. E. H. Jenkins.

FUNGUS ON WEYMOUTH PINE.—Within the last twelve years most of the *Pinus monticola* growing here have been more or less bad with that fungoid disease *Peridermium Strobi*, or Pini, both in branch and bole; and Mr. Fotheringham has had them all taken out, with the exception of one, a very fine tree over 70 feet high, which is slightly affected with the disease in the tips of a few branches. As Mr. Fotheringham is anxious to have it stamped out, I should like to know whether the spores of the *Peridermium* live on the roots, especially on those we have felled but not grubbed out. As a preventative we are going to cover all the places where they have been with gas-lime, and plant no other Pines for some time. It has also killed a good *Abies concolor violacea*, and is also on the Weymouth Pine. I shall be pleased to hear some of your arboriculturist correspondents' opinions. James Laurie, Murlilly Castle Gardens, Perth. [The particular fungus passes part of its life on Currant-bushes of various kinds. See p. 131 of our present volume, and *Gardeners' Chronicle*, 1892, pp. 44 and 135. Hence it would be desirable to destroy any species of *Ribes* growing in the vicinity. Ed.]

POPULAR AND STERLING VARIETIES OF PEAS.—I had not intended reverting to this subject, but the remarks made by Mr. James Gibson at p. 132 require a few words more from me, in order to set that gentleman's mind at rest regarding the amount of manure which I annually used in the kitchen gardens at Longford, in preparing the ground for Peas and other vegetables. I can assure Mr. Gibson that the facts were correctly stated in my article (p. 32), and no "slip of the pen" had been made by me in the matter. I certainly do not wonder at Mr. Gibson being astonished at the quantity of manure which I had at my disposal at Longford—my position in this respect being, so far as my experience goes, quite unique—seeing that I had the manure from the hunting and livery stables in which about sixty horses were kept (a little over 100 yards from the garden manure-coop) entirely at my command. No wonder, therefore, that I should endeavour to turn this most favourable circumstance (from a kitchen gardener's point of view) to good account. And in order to do this I had a cement tank built under ground at the lower end of the manure-coop, and in which direction the ground ran, so as to enable the liquid-manure to drain into the tank. The manure as received from the stables was made into successive "benches" at the tank-end of the coop, one man standing thereon spreading out the manure thrown up to him by three or four others. In the absence of rain, the manure (consisting of straw and droppings) was well and frequently watered; water being delivered thereon through a hose at the rate of about 36 gallons per minute—the soakage being conveyed in tubs to the fruit-tree borders at a temperature ranging from 70° to 90°. The several banks of manure were turned over two or three times each at intervals of a few weeks before being used in the garden, the manure being so thoroughly decomposed as to admit of its being placed on the barrows or carts with shovels if necessary. Thus it will be seen that the heavy dressings of manure trenched into the ground in autumn, and dug into it at various times throughout the year, was soon reduced to the consistency of the soil, and therefore was at all times easily assimilated by the roots of the several crops—including, of course, Peas and Beans. Are not the nodules on the roots of Peas grown under ordinary conditions caused by a check of some sort? such, for instance, as would likely to be experienced by Peas growing in shallow, light, poor soil. Be this as it

may, I have never noticed nodules on the roots of Peas grown as described in my article at p. 32. Will Mr. James Gibson, or any other gardener who has succeeded in growing good crops of Peas in ground in which liberal dressings of short moist manure had been dug, kindly state for the benefit of the readers of the *Gardeners' Chronicle* why, in their opinion, the best possible results in the way of heavy crops of large, handsome, well-filled pods of Peas, large in size, and fine in quality, cannot be grown in ground prepared as indicated in my note at p. 32? Mr. Gibson says, "There are few gardeners who will attempt to follow Mr. Ward in his methods of Pea-growing, so far as manuring is concerned," adding that "in most gardens it is impossible to obtain so much manure." Quite so. But this assertion does not in any way go to show that my method of Pea-growing was wrong. Mr. Gibson, according to his own showing, is not in a position to condemn my method of procedure. He has never tried it, neither can he adduce sound facts to show that the system is wrong. Mr. Gibson says that "about one-twentieth of the quantity of manure recommended by Mr. Ward is what we use here," adding, "and even that is a heavy dressing;" and he further says, "added to this are a sprinkling of wood-ashes and old mortar-rubbish, and a thin dressing of dissolved bones," these being incorporated with the soil in trenching 2 to 3 ft. deep. "The dung," Mr. Gibson says, "is used with a view to helping to retain the moisture in the soil, which is of a gravelly and chalky nature, very light and porous." What effect were the "sprinkling of wood-ashes and old mortar rubbish, and a thin dressing of dissolved bones" likely to have on Peas sown in such land as that described above? Mr. Gibson "having carefully watched of late years the ineffectiveness of nitrogenous manures on Peas, he has come to the conclusion that if they are of any benefit at all (!), it is in the form of farmyard or stable-dung on light soils, which prove of use in conserving the moisture in the soil, thereby benefiting the Pea-crop in dry weather." It is somewhat difficult to follow Mr. Gibson in this matter. He implies that the Pea-crop does not require the soil (whether light or heavy in texture) being enriched to enable it to yield satisfactory crops. In short, his reasoning implies that, no matter however poor the land may be, it is not necessary to dig good dressings of well-rotted stable-dung or farmyard-manure therein to secure good crops—moisture being the only *sine qua non* in his opinion. Prof. Malden, in his article on "Practical Agriculture," printed in the *Salisbury and Winchester Journal* on Jan. 25 last, under the heading of "The Pea Crop," writes thus:—"The manuring for Peas is rather a vexed question, since the theory of the nitrogen-eliminating powers of the nodular growth on the roots has been recognised; but there appears to be little doubt that though the plants can thus acquire nitrogen from the air, they can also assimilate it from the soil in the ordinary course—therefore, though a few years ago the use of farmyard manure for the Pea-crop was deprecated, there seems little doubt that this manure is by no means wasted on Peas." The above remarks go to show that the rougher experiments made by gardeners and farmers, and the results thereby obtained, cannot be overlooked by chemical scientists, in arriving at definite conclusions regarding the special requirements of garden and farm crops. H. W. Ward. [Owing to the crowded state of our columns of late, the publication of the above has been unavoidably delayed. Ed.]

CARNATION MRS. LEOPOLD DE ROTHSCHILD.—In reply to B. Ashworth (p. 233), I quite agree with him that these propagated in January and stopped early would flower from the side-shoots the following winter; but I have never interpreted January to mean spring. It is just this difference which often causes disappointment; and there is also a considerable difference in circumstance. It is quite evident that Mr. Ashworth is a good cultivator, and his plants get the best possible treatment

without getting a check at any time. With regard to the relative merits of the above and Miss Joliffe, I wrote from my own experience, which has been acquired in growing large quantities of the two varieties side by side from plants propagated in March, each variety being allowed to grow on without being stopped, Miss Joliffe flowered from the main stem in August, and these blooms were cut when the terminal bloom was well open, cutting them with long stems, and all the buds; the side-shoots following on, and commencing to flower by the end of September, while the terminal flowers of Mrs. L. de Rothschild did not open until September, and I well remember

mentioned by me in my note of March 8, viz., 4 to 5 feet. As a matter of fact, I have seen vigorous plants, provided with ample rooting space, carrying growths quite 12 feet in length, and such growths are doubtless of great utility to many gardeners; but, personally, I prefer sprays 4 feet long or thereabouts, cut from plants growing in smaller receptacles than those mentioned by Mr. Ashton. So far as my experience goes, such are more serviceable; the leafage along the whole length of the growth is more dense, yet quite as elegant as that produced on the more vigorous shoots. I grow the species in 32 and 24-sized pots, and feed liberally when they become filled with

very pretty, and resembled a leopard's skin as much as anything. I should add that it remained at its best for only one day, when the sheath began to wither, and the spike to droop; it is now gradually fading, the sheath being curled instead of lying out smooth, but still retaining its prettily marked appearance. I am sending the account of this curious bulb, as I believe it is rather uncommon, and might interest some of my fellow-readers of your Journal. If you consider it sufficiently interesting, I will have the bulb photographed when potted and the growth at its best, and send it up to you. *James H. Jones, The Gardens, The Bungalow, Westgate-on-Sea.* (See p. 261, col. 2.)



FIG. 82.—ASHWICK HALL: VIEW OF THE "JUBILEE" FLOWER-GARDEN. (SEE P. 255.)

on one occasion having a large batch which did not produce a single flower from the side shoots until the following April. I think I referred to October as the time for propagating, so as to ensure side shoots flowering the following winter; and my experience was gained in the neighbourhood of London, with its smoky fogs to contend against, and I can quite understand that under more favourable conditions it is possible to obtain the same results from those propagated in the month of January following. I am pleased to hear Mr. Ashworth's good opinion of Countess of Warwick, and I would recommend him to try Ethel Crocker, a newer American variety, which received an Award of Merit from the Royal Horticultural Society last season, and is of similar colour to Mrs. Lawson, and very free. *A. Hemsley.*

ASPARAGUS SPRENGERI.—I quite agree with your correspondent, Mr. B. Ashton, when he says that under liberal cultivation this Asparagus attains to greater length than that

their fleshy, tuber-like roots. I think with Mr. Ashton that there is no more graceful plant for suspending from the roofs of warm structures than this Asparagus; and whether they are planted out in baskets of soil of the size stated, or kept in pots and stood in wire baskets (the pots being covered with live moss), they are objects of great beauty and utility. *H. T. Martin, Stoneleigh Abbey Gardens.*

SAUROMATUM GUTTATUM.—I am enclosing you an illustration of a curious bulb which has just been in flower here. I received the bulb from my employer's son last October, and kept it on a shelf in the conservatory. About three weeks ago it commenced to grow, and on Tuesday, March 25, the sheath started to unfold. The next day the sheath was fully developed, reaching a length of 15 inches. The spike was 11 inches high, and the growth from the top of the bulb to the commencement of the spike was 4 inches. It gave out a very strong and not altogether pleasant smell, but was very curious to look at. The sheath was

UNITED LEAVES OF GRAPE-VINE.—I herewith beg to forward you a peculiar leaf-formation in the form of a double or twin leaf taken from main rod of Black Hamburgh Vine, three years planted. I have seen many fasciated growths similar to the one which produced this novelty, but not a leaf. *Wm. Chuck, Brodsworth Hall Gardens, Doncaster.*

SELECTED SWEET PEAS.—I have read Mr. Simpson's further letter upon Sweet Peas with much pleasure. In making comments upon his selection in your paper of January 11, I should like him and your readers to kindly understand the remarks were not made to find fault with his selection, but to try to improve it, and to give my experience for the benefit of your readers. I have always taken a great interest in Sweet Peas, not only growing them myself under different treatment, but I have seen them growing in different parts of the country and abroad. I have made it a duty every July to visit some of the large trade growers, and see their different trials to make my notes as

complete as possible, and they have been published in my little book, *All About Sweet Peas*, 6,000 of which were originally printed, and all the profits arising from it were given to the Gardeners' Orphan Fund. This year it is my intention to revise this little book where necessary, in order that it may be as reliable as it can be made, so if there are any of your readers who think they can give any better descriptions or any better selections, I shall be pleased to receive them and give them consideration for the general good of horticulturists at large. Referring to Mr. Simpson's last remarks in your issue of the 22nd ult., I am somewhat at a loss to understand Mr. Simpson talking about Prince Edward of York as the nearest approach to a scarlet Sweet Pea. This variety in my opinion is not a self-colour at all, but is more of a bicolor, the standard being a salmon-carmine tint, and the wings decidedly a pink or rose. It is certainly a very pretty and interesting variety, but to class it as a scarlet I think is misleading. Mr. Simpson's remark that Miss Willmott is more like Lady Mary Currie I certainly agree with. His remarks upon Duchess of Westminster somewhat agree with mine, because this variety is too small as compared with others of a somewhat similar tint. His remarks upon Colonist are somewhat a mystery to me, because I do not judge this variety by the results of my own personal growing, but from my general observation in the different large trials. The discrepancy of colour, or these different shades of colour, were particularly noticeable in the row that was grown by Mr. Sherwood in his trial-grounds in 1901 for the special benefit of the National Sweet Pea Committee. Mrs. Dugdale, as shown last year, was certainly better than I have ever seen it before; but the deformity in the wings was particularly noticeable in Mr. Sherwood's trials in 1900. Mr. Simpson quite misreads my remarks respecting Lady Ormesby Gore and Mrs. Eckford. If he will kindly read it again, he will there find I said "For Lady Ormesby Gore I should substitute Mrs. Eckford." I did not say I would substitute Lady Ormesby Gore for Mrs. Eckford, for I consider the Lady Ormesby Gore is really not wanted with such a much-improved variety as the Hon. Mrs. Kenyon. Respecting Othello and Black Knight, that I think will have to remain a matter of a difference of opinion. For my own part, I should fifty times prefer Black Knight; and I am sure that if Mr. Simpson or any of your readers will note in the coming season, at any ten or twelve of the leading shows, that they will find Black Knight is the favourite with the majority. Lovely and Prima Donna: I consider these both charming varieties. Lovely is certainly worthy of its name; but that Mr. Eckford himself thought Prima Donna to be the better of the two is, I think, confirmed when he described the latter himself as "A great gem, and the best of its colour." In regard to the three whites, Emily Henderson, Sadie Burpee, and Blanche Burpee, I think in all good collections of forty or fifty varieties all three should be grown, because they represent the three standards in as decided a manner as any three varieties of one colour well could do. Emily Henderson has a split or heart-shaped standard, and perhaps in matter of whiteness is the best of the three; Sadie Burpee has generally been looked upon by many as the best of the three, but I always say it hoods too much to please me, and I very much prefer Blanche Burpee with its bold, upright standard, and generally three and often four flowers on a stem. Having said so much, I will now give what I consider the best varieties in cultivation, naming what I would grow if I selected six, twelve, twenty-four, or forty best, adding ten others which, if wanted are all that is necessary or desirable to grow. All the others may very well be discarded, unless one wanted to grow them for variety sake.

Six varieties.—Blanche Burpee, Duke of Westminster, Lady Griseld Hamilton, Prima Donna, Prince of Wales, Salopian.

For twelve varieties I should recommend the

six above and the following:—Black Knight, Coccinea, Gorgeous, Hon. Mrs. Kenyon, Miss Willmott, Navy Blue.

For twenty-four varieties the above and the following:—Captivation, Countess of Lathom, Emily Eckford, Hon. F. Bouverie, Lady Mary Currie, Lord Kenyon, Mars, Mrs. Eckford, New Countess, Prince Edward of York, Sadie Burpee, Triumph.

For forty varieties the above and the following:—Admiration, Dorothy Tennant, Duchess of Sutherland, Emily Henderson, Golden Gate, Her Majesty, Lottie Eckford, Lovely, Othello, Queen Victoria, Royal Rose, Venus, and the four striped varieties, America, Gaiety, Mrs. J. Chamberlain and Prince of Wales. If anyone wants more than forty varieties I would add the ten following:—Captain of the Blues, Countess Cadogan, Duchess of Westminster, Duke of Sutherland, George Gordon, Lady Nina Balfour, Lottie Hutchins, Mrs. Dugdale, Oriental, Stanley.

In conclusion I may say that if I were asked for what I consider to be the best twenty varieties to grow with the idea of sending a stand of twelve or eighteen varieties for exhibition, my choice would be the first twelve above mentioned with Countess of Lathom, Emily Eckford, Lady Mary Currie, Mars, Mrs. Eckford, Prince Edward of York, Sadie Burpee and Triumph. Robert Sydenham, Birmingham.

NURSERY NOTES.

ORCHIDS AT MR. J. CYPHER'S, CHELTENHAM.

At all seasons of the year, capital displays of Orchids in bloom are to be found at the Exotic Nurseries, Queen's Road, Cheltenham, but the spring is the best time for Dendrobiums, which are a specialty of this nursery. Here may be seen in contiguous houses a most bewildering collection of varieties of *D. nobile*, which the firm has been selecting from importations, and acquiring from all sources for many years past. To look over a list of names of varieties, one is apt to think that there can be in some cases but few differences to note, but when seen growing and flowering together the variations are unmistakable to those who make Dendrobiums a specialty; as witness the fine Dendrobium *nobile elegans*, *D. n. pendulum*, and *D. n. pulcherrimum*, which originated in the now defunct Rollisson collection. This variety is still in Mr. Cypher's selection, showing distinct features which render them well worthy of being retained. Then there are fine examples of the rich purple-tinted *D. nobile nobiliss*, which for years everyone agreed was not to be surpassed. But "never is a long day," and out of a recent importation to the Exotic Nurseries, a *D. n. nobiliss giganteum* has flowered which is an improvement in every respect on the older form, although the flowers are produced on a small plant. Another very distinct form is *D. n. striatum*, with lilac-tinted flowers, the sepals and petals of which are evenly veined with purple, unlike that of any other form. *D. n. Fisheri* is beautiful in shape, showing much white around the centre, and rich carmine-rose on the outer halves of the segments; *D. n. Ballianum* and *D. n. Murrhinianum* are white varieties, with faint rose-purple disc; and in this class again Mr. Cypher has flowered a distinct improvement, especially in the larger and better-formed flower; *D. n. album* has pure white flowers, *D. n. Cypheri* a delicately-tinted form, and *D. n. Statterianum*, *D. n. Heathi*, *D. n. Sanderianum*, *D. n. majus*, *D. n. Cooksoni*, *D. n. rotundiflorum*, and others show well in compact, finely-flowered plants, suspended from the roof of the house. Other pretty Dendrobiums were *D. Wardianum album*, *D. Devonianum candidulum*, Dendrobium ×

rubens magnificum, a very large and richly-coloured flower; *D. × Apollo grandiflorum*, one of Mr. Cypher's best; *D. × Apollo album*, a beautiful white form; varieties of *D. × melanodiscus*, *D. × Rainbow*, *D. × Luna*, *D. × Venus*, *D. × Virgil*, *D. × splendidissimum grandiflorum*, and *D. × Ainsworthi*, in many fine forms; *D. × Cybele*, *D. × Rolfeæ*, and a number of others, including some unnamed crosses, two pretty ones being *D. × tortile × Cassiope* and *D. crassinode × aureum*. The Dendrobiums are grown in this nursery with great luxuriance, the rule being to apply a good brisk heat and plenty of water when growing, and then a well-defined cooler dry resting season. So grown, a large quantity of *D. Phalenopsis Schroderianum*, including two or three pure whites, and a large general collection, are maintained in increasing vigour.

Odontoglossums form another specialty, and several houses are filled with fine plants, which in every case have large pseudo-bulbs of a dark green, shining appearance—a plain indication of robust health; and this season many comparatively small plants are sending up two spikes each from one pseudo-bulb, only one of which is retained, the other being promptly pinched off, so as not to distress the plant by compelling it to carry so many blossoms. There are good displays of *Odontoglossum crispum* of the best type, and in less quantity *O. Halli*, *O. cirrosum*, *O. triumphans*, *O. Inteo-purpureum*, *O. blandum*, *O. niveum*, *O. Edwardi*, &c., and also a few hybrids, of which one distinct variety seems to be a hybrid of *O. Pescatorei*. It has white flowers, shaped like those of *O. Coradinii*, purplish markings at the base of each segment, and a large purplish blotch in the middle of each. In one *Odontoglossum*-house is a bright array of *Sophranitis grandiflora*; in another, a large batch of *Masdevallias*, of which *M. Shuttleworthi*, *M. ignea* varieties, *M. × Heathi*, *M. Veitchiana*, *M. × Hincksiana*, *M. Schroderiana*, *M. Estradæ*, and others were in flower; and some of the *M. bella* and *M. Chimæra* class, with prominent flower-buds.

In a cool-house, the varieties of *Lycaste Skinneri*, including four excellent plants of the best pure white, were in bloom; and among other cool-house plants noted were a good lot of *Oncidium Marshallianum*, *O. sarcodes*, *O. cheiroporum*, *O. incurvum*, *O. superbiens*, *O. macranthum*, *Ada aurantiaca*, and a form of it much finer than the ordinary, and with larger, more expanded orange-scarlet flowers.

Cypripediums form a third specialty, and especially complete was the collection of fine yellow and other distinct forms of that favourite species *C. insigne*. So varied is the collection, that with some of the darker coloured varieties flowered out of imported plants there is a close resemblance to *C. × nitens* and *C. × Mons. de Curte*. Among those in flower were some very large *C. villosum majus* and *C. v. aureum*; *C. Boxalli atratum*, *C. selligerum majus*, *C. × Harrisonianum superbum*, still one of the stateliest of the dark-flowered hybrids, if the still rare, best form, such as this is, be obtained; *C. Mastersianum*, with fine, uncommonly tinted flowers; *C. × Goultenianum*, *C. × Lathamianum*, *C. × Calypso*, *C. × Godseffianum*, *C. × rubescens*, *C. × Haynaldo-Chamberlainianum*, really showy, with several flowers open at the same time on the same spike, and a number of others.

Cattleyas and *Lælias* were in quantity and fine condition, good specimens of *Lælia purpurata* occupying one side of a house. Among those in flower are Cattleya Trianae varieties, including *alba*; *C. Schroderæ*, *C. Harrisoniana*,

and *C. intermedia*; and the plants in a fine lot of *C. Mendeli* are sending up spikes.

Suspended overhead were a number of stout specimens of *C. Lawrenceana*, which is fast becoming a rare plant; and a good lot of the favourite *C. aurea*. *C. Bowringiana* are also very vigorous, and in most of the sections of *C. labiata* the white forms are doing well.

In one house there were observed some large specimens of *Epiphronitis* × *Veitchi* well furnished with flowers; at the end are trained varieties of *Epidendrum* × *O'Brienianum*, and

admixture great care is necessary, and the leaf-soil not allowed to get wet.

Among the many other interesting things noted in flower at Mr. Cypher's are a fine specimen of the pretty rosy-tinted *Vanda* × *Charlesworthi*, a batch of *Oncidium Papilio* and *O. Krameri*, grown much cooler than usual; *Phaius Walliehi*, with extraordinary stout flower-spikes; a plant of the distinct-looking *Laelia præstans* Cypheri, which has fine, white flowers with a slight lavender tint, and a rich plum-coloured labellum with white

SOCIETIES.

ROYAL HORTICULTURAL. Scientific Committee.

APRIL 8.—*Present*: Dr. M. C. Cooke, in the chair; and Messrs. Hooper, Gordon, Odell, Drury, Bowles, Douglas, Worsley, Holmes, Bennett-Poë, Rev. W. Wilks, and Dr. Masters.

Violet-leaf Disease.—Dr. COOKE reported as follows on the specimens sent by Col. Sprague:—

"Many of the leaves of the Violets exhibited were in a bad state, the tissue being entirely bleached and dead, but not in interfoliary spots, as in *Phyllosticta* and *Septoria*, but marginal, extending inwards until the greater part or the whole of the leaf is involved. It was the opinion of some of the members of the committee that this bleaching was the result of external circumstances, and not from the attacks of any parasite. With this view I am disposed to agree. The mode of attack is not that of the American disease (*Alternaria*), of which I failed to find a single spore.

"All the spots were occupied by tufts of a black mould, which at present I am inclined to think must be saprophytic, appearing subsequently on the dead tissue. They do not appear upon the leaves beginning to fade, only on the quite dead spots. These moulds are of two kinds, and both belong to genera of which the species are wholly saprophytic, it being the exception, in some few cases, for them to become parasitic.

"The fungus appears in small, dark olive-coloured tufts scattered over the dead tissue, and in no case becoming confluent, and spreading in patches.

"The earliest form to appear is a *Cladosporium*, which certainly is not *Cladosporium herbarum*, nor does it appear to be *Cladosporium epiphyllum*. The threads are slender, unbranched, septate, and of a pale olive, not nodulose or torulose, and rather long for the genus (120 to 150 by 5 μ). The conidia, as usual, are at first continuous, afterwards uniseptate, then biseptate and triseptate; so that in the same tuft one may find conidia with no septum, and others with one, two, or three, in all cases narrow, and but little thicker than the threads (18 to 30 by 6 to 7 μ).

"The other form, which appears mixed with the foregoing, is a *Macrosporium* of the type of *M. sarcinula*, with delicate, deciduous threads and somewhat cubical conidia (30 to 35 by 15 to 30 μ), truncate at the ends, and but slightly constricted. The septa, longitudinal and transverse, divide the conidia into quadrangular cells, mostly in three irregular rows, and of a darker olive-brown than appears in the *Cladosporium*.

"Unfortunately, I have not seen a description of the Italian *Macrosporium Violæ*, which has the reputation of being a destructive parasite on Violets.

"It has been demonstrated that there is some close affinity, or relationship, between *Cladosporium* and *Macrosporium*. They are often found together, and in some cases have the reputation of being the microconidia and macroconidia of some species of *Pleospora*, bearing muriform sporidia contained in asci.

"I can only repeat that I do not think these moulds are the cause, but the consequence of the disease.

"N.B.—Since writing the above I have seen description of the Italian pest, *Macrosporium Violæ* (Poll.), and it is certainly not the same as the one I have described; since, in that species, the spots are definitely orbicular and regular, and the conidia are clavate, and attenuated at the base (40 to 90 by 10 μ), not at all resembling these described above, which I must still, in default of better evidence, regard as a saprophyte."

Narcissus Disease.—Rev. W. WILKS showed further specimens showing yellow stripes, both in the leaves and in the flowers, as a preliminary to the shrivelling of the tips of the leaves. A similar condition had been seen in Iris. It was considered that the disease was due to the presence of bacteria. Mr. Nicholson remarked that *Narcissus* "Sir Watkin" was much subject to the discoloration, but when growing in the grass it was relatively free from it.

Peach-tree Disease.—Some conversation ensued with reference to a disease on Peach-trees in Essex, and it was desired that further specimens of the roots and foliage might be sent.

Peristeria pseudo-bulbs.—Mr. GORDON brought pseudo-bulbs affected with a black fungus, on which Dr. Cooke undertook to report.

Rootless bulbs of Hyacinths.—Mr. GORDON also brought specimens showing this not uncommon phenomenon. The cause was attributed in the first instance to the bulbs not having been matured, and next to some check to growth.

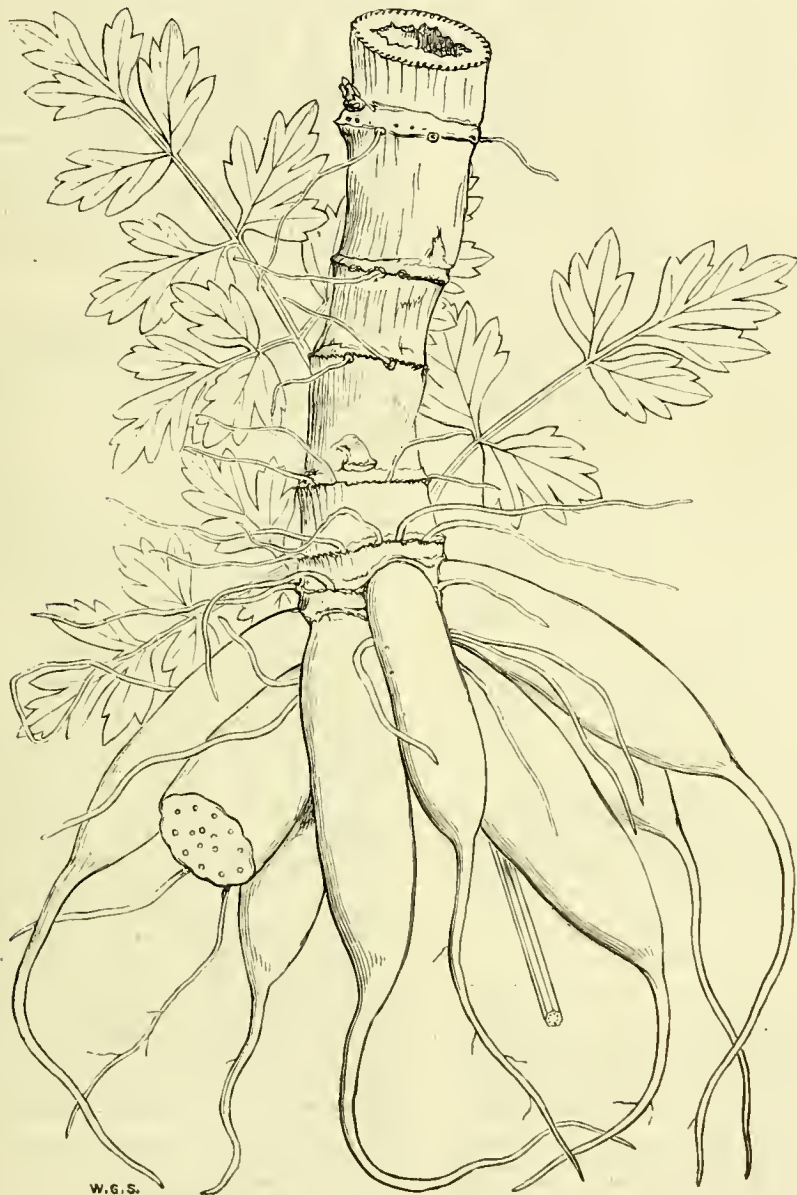


FIG. 83.—ROOTS OF *CEANOTHE CHOCATA*—POISONOUS.

(See note in R.H.S. Scientific Committee Report, p. 266.)

E. radicans, which Mr. Cypher uses so effectively in his floral displays. On one side-stage is a batch of *Miltonia vexillaria* sending up spikes. This batch has been made the subject of experiment with leaf-soil, one half being potted in it, and the other in peat and sphagnum-moss. The leaf-soil has the best of it, for the plants are the finer ones. Mr. Cypher has also used leaf-soil for *Odontoglossums*, mixing the leaf-soil with the other material in a similar manner to that recommended by Mr. W. P. Bound in the *Orchid Calendar* of the *Gardeners' Chronicle*, March 22, p. 190 (and which has also been favourably reported on by others) with considerable success. Where leaf-soil is used the chief point is to be careful with the watering. Where it is used without

front; a grand lot of white *Laelia anceps* sending up spikes freely; a pretty batch of *Pinguicula caudata*; fine specimens of the best white *Cymbidium eburneum*, and other *Cymbidiums*. *Odontoglossum Rossii majus*, *Cochliana Noezliana*, *Aërides japonicum*, &c., and all with the well-to-do look which Mr. Cypher well knows how to produce.

There is, as might be expected, a house for the raising of hybrid Orchids, and in it and some of the other houses there is evidence that this kind of work is being carried on with success, for hybrids were observed in all stages of development, some of the flowering plants of *Laelio-Cattleyas* being said to be of special merit; but most of the old plants were acquired by purchase.

Plants exhibited.—Mr. LYNCH brought from the Cambridge Botanic Gardens specimens of the following plants:—

Kalanchoe somaliensis.—Figured in the April number of the *Botanical Magazine*, from Sir Edmund Loder, collected by himself, also introduced by the Cambridge Botanic Garden through Mrs. Lort Phillips.

K. coccinea, *K. oreocata*, *K. cassiopea*, from Dammann of Naples. The last name is not in the *Kew Index*, and the plant therefore probably requires to be identified.

Gnidia simplex.—Probably referable to *G. carinata*.

Tecoma australis.—Remarkable for the sunken glands seen on the lower surface of the leaf, such as are met with in other genera of the Order.

Aloe somaliensis, sp. n.—Introduced to Cambridge, also to Kew, but not yet figured.

Lopezia minima.—Not commonly seen, but interesting on account of its mechanism for cross-pollination. The one perfect stamen is held in tension by a folded, leafy, or expanded staminode below. On this part the insect alights, as the best position from which to reach the two drops of honey that seem to rest upon the knee-shaped bend of the upper petals. The result is, that the stamen is released and pollen is dusted upon the insect. Self-fertilisation is impossible on account of marked proterandry.

Osteomeles anthyllifolia.—Roughly, a *Crataegus* or Hawthorn, with leaves of leguminous type, interesting further on account of its distribution in East Asia down to Pitcairn's Island. *Petasites palmatus*, A. Gr.—Native of West Asia and California, a rare, but very distinct marsh plant. *Helleborus viridis*.—From a wild locality near Huntingdon. *Poterium spinosum*.—From Syria, interesting in comparison with other species. *Ribes speciosum*.—From California, Fuchsia-flowered Gooseberry. *Kennedyia nigricans*. *Petasites japonicus giganteus*.

Myrsiphyllum.—Mr. SAUNDERS showed specimens of the foliage of this plant, in which the false leaves were withered at the tips. The appearances were considered as the result of defective cultivation.

Cypripedium.—Mr. DOUGLAS brought a flower of a hybrid variety in which the lip, instead of forming a pouch, was divided into three portions, a basal portion concave and trough-like, green, marked with small purplish dots; an anterior portion raised and hump-like, striped with dark brownish-purple on an olive-coloured ground. On either side of this was a wide, oblong, projecting wing. The column was normal.

Various Plants.—Mr. WORSLEY showed specimens of *Hymenocallis Moritziana*, *Tulipa Greigi* with the bulbs attacked with mites, and *Trilecia uniflora* with two flower-stalks fused together.

Lathyrus Seedlings.—Mr. HOLMES brought specimens to show the sequence of the leaves from the cotyledons to the developed stipules which replace the leaves.

Intra-carpellary Proliferation.—Mr. HOLMES showed a specimen of this peculiarity in a *Lenon*.

Eranthe crocata.—Mr. HOLMES also showed roots similar to those which had recently occasioned the death of a boy near Hammersmith. The wildest statements were made at the inquest, but Mr. Holmes having obtained specimens from the locality, there was no doubt whatever as to the real cause of death (fig. 83, p. 265).

The "Sporting" Peculiarities of the Persian Cyclamen.

—Mr. DENMAN supplied the following note:—The *Cyclamen persicum* (latifolium) is characterised by its "sporting" tendencies, to the investigation of which I have given much care and attention. The main points of interest are these:—(a). The Persian *Cyclamens* raised from seeds cannot, after the third or fourth year, be induced to retain their former characteristics, as regards the colour of the flowers, &c. (b). Although the flowers are liable to "sport," they cannot be regarded as specific characters, because they will not reproduce the same sporting tendencies when raised from their own seed. (c). The same plant frequently produces two flowers of distinctly opposite colours; or, on the other hand, a plant, say with pure white flowers, will produce a mixture of colours after an interval of three or four years. (d). The sporting peculiarities of the *Cyclamen* being such, what steps may be taken to ensure the retaining of the distinctive colours of the plants under consideration?

Let us briefly consider the first point:—The "Persian" *Cyclamen*, quite apart from the other species, cannot be induced to retain its seedling characteristic colour after an interval of three to four years. Now, why are these peculiarities so marked? The plants which were under trial were quite secure from the visits of insects to cross fertilise the blooms; and further, even if the flowers were visited by insects, how comes it about for the flowers produced on the old plants, to "sport,"

from their original colour? whereas seedlings from the same plants, do not exhibit signs of "sporting," but retain the original colour of the seed-bearing plant, unless, of course, the flowers were hybridised. I am convinced that the peculiarity is due to some changes which take place in the bulb previous to its flowering for the third year, and that it is not effected by the intervention of foreign agencies, such as insects, &c. It must be understood that these peculiarities are not exceptional, as some suppose; but rather the reverse, it is the rule. From about fifty plants grown, I do not notice one that has not "sported," the white flowers have been spotted with pink, and *vice versa*; the red and purple have been distinctly darkened in colour, while the natural-spotted flowers have been changed either into pure white or red, as may be the case—some plants again, as before mentioned, bearing two flowers of opposite distinct colours. Let us now compare the *Cyclamen persicum*, with the hardy species: take any of them, for instance, the *C. europæum*, *C. repandum*, or any of the others; have they been known to sport? No! and yet, these are daily visited by myriads of insects, without apparent results; this then, proves that the suggestion which I have put forward, is correct, and further that this peculiarity is confined to the Persian *Cyclamen* alone. As it is not due to the intervention of foreign agencies, or external conditions, the sporting element must take place in the bulbous root of the plant.

The plants of the order "Primulaceæ" are conspicuous in the vegetable kingdom for their sporting peculiarities; but of the whole genus none can possibly excel the *Cyclamen* in this respect, and in addition to this the flowers are often malformed, i.e., examples have been seen which instead of the usual single flower, bore three and four blooms, and a number of foliage leaves on the same stem.

After a cursory glance over the former points, we come to the final one:—What steps may be taken to retain the original and distinctive colours of the flowers? I can see no way out of the difficulty, with the exception of growing none but young plants, and discarding them after they are three or four years old. Could we trace this deficiency to insects, &c., or if we could have any proof that the peculiarities are due to the flowers themselves, then we could possibly find a remedy. But in spite of all these *lusus nature*, the point is one which appeals to the scientist more than to the horticulturist. *J. Denman, Brynwalla, Tremereichion, St. Asaph.*

Vines.—From Mr. YEATMAN came roots dying, as was conjectured, from over saturation of the soil.

Eucalyptus cordata.—Dr. MASTERS showed a flowering specimen of this species growing in the island of Arran, which he had received from the Rev. Dr. Landsborough.

LINNEAN.

APRIL 3.—Professor S. H. VINES, F.R.S., President, in the chair.

Mr. R. MORTON MIDDLETON, F.L.S., exhibited two letters from Linnaeus to Dr. David van Royen and Mr. Richard Warner of Woodford, dated respectively April 18, 1769, and September 29, 1768; as also a letter from Sir J. E. Smith to N. Wallich, on Nepalese plants, written in 1819.

Mr. R. A. ROLFE, A.L.S., on behalf of the Director, Royal Gardens, Kew, exhibited a series of specimens of *Pachira aquatica*, Aubl., and *P. insignis*, Savigny, from British Guiana, collected by the late G. S. Jenman, F.L.S., Government Botanist, to illustrate the great variation which exists in the size and shape of the fruits. It appeared that the two species were best distinguished by their flowers, those of *P. insignis* being very large, and having broad crimson petals of considerable substance, while those of *P. aquatica* were smaller, and the petals light yellow, narrower, and of more slender texture. No distinguishing character had been detected in the fruit, which, though varying greatly in size and shape, seemed almost to duplicate itself in the characteristic forms of the two species. In both, the shape varies from fusiform-oblong and considerably elongated to shortly elliptical, with a series of intermediate forms, as seen in the series exhibited. There was also a certain amount of variation in the leaves and flowers, though in the latter each species retained its own essential character. These trees were common over the great alluvial forest-region, extending also to Brazil, and were commonly cultivated for ornament.

Mr. CARRUTHERS, F.R.S., in making some observations on the subject, prefaced his remarks by deploring the loss which the Society had sustained by the recent death of Mr. Jenman, whose labours in the cause of botanical science, and whose work on the Ferns of Jamaica especially, had added much to our knowledge of the subjects investigated by him.

On behalf of Mr. W. B. HEMSLEY, F.R.S., Mr. Rolfe also exhibited some specimens illustrating the precocious germination of the seeds of a species of *Dracena*. Germination had taken place through the pericarp while the berries were still hanging on the plant.

Mr. SPENCER MOORE, F.L.S., read a paper entitled "A Contribution to the Composite Flora of Africa," in which he described a number of new species in the Herbarium of the British Museum. He found that the north-eastern tropics, especially British East Africa and the neighbouring parts of Somaliland and Southern Abyssinia, had yielded most of the novelties, the chief collectors having been Mr. Scott Elliot, Prof. Gregory, Mr. F. J. Jackson, Lord Delamere, Dr. S. E. Hinde, Mrs. Lort Phillips, Dr. Donaldson Smith, Rev. W. E. Taylor of Mombasa, and Prof. Mackinder. From the southern tropics he described some plants collected by the late Mr. John Buchanan, by Mr. Crawshaw, and Mr. T. G. Eén. A new Gnaphaloid genus (*Artemisiopsis*) was characterised, and, *inter alia*, species of *Vernonia*, *Erlangea*, *Helichrysum*, *Coreopsis*, and *Senecio*.

Prof. F. E. WEISS, F.L.S., read a paper, illustrated by lantern-slides, on a biserial Halonial branch of *Lepidophlois fuliginosus*. The branch in question, about 7 inches in length, was found in a large nodule by Mr. George Wilde at Haugh Hill, near Stalybridge. The second part of the paper consisted of a detailed account of the anatomy of this well preserved specimen, which went to confirm Dr. Scott's previous identification of it.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

APRIL 3.—There was a capital display of plants at the meeting held on this date. Nine groups were staged, and many meritorious examples were noted amongst the plants shown.

R. TUNSTALL, Esq., Burnley (gr., Mr. Balmforth), had a pleasing collection of plants, containing several good *Odontoglossums*, of which *O. crispum* Alpha, a large and pale brown spotted form, was the most distinct (First-class Certificate). Other plants noted in this group were *O. triumphans* var. *latisepalum*, *Miltonia* × *Bleuana*, *O. crispum* var. *Gladys*, and *Cypripedium* × *Cowleyanum* var. *superbum*; the latter had been previously before the Committee. A Silver Medal was awarded for the group.

S. GRATRICK, Esq., Whalley Range (gr., Mr. Cypher), showed a plant of *Dendrobium* × *Aurora*, and the award previously made was confirmed.

Mrs. S. GRATRICK staged a handsome *Cattleya*, viz., *C. Trianae* var. *Empress of India*, a beautiful flower, with white sepals and petals, of good form, and having a lip with a tinge of bluish-purple in it (First-class Certificate).

G. H. PEACE, Esq., Eccles, received Awards of Merit for *Dendrobium* × *Holmesianum* and *D. × Cybele* var. *pulcherrima*.

R. LE DOUX, Esq., West Derby (gr., Mr. Davenport), sent a good form of *Odontoglossum* × *loochristense* var. *Mrs. Le Doux*, for which an Award of Merit was voted. It is a handsome form, with bright yellow ground and few large blotches. *O. Ruckerianum* var. *Marfieldense* came from the same collection.

A. WARBURTON, Esq., Haslingden, exhibited a plant of *Odontoglossum* × *Wilckeanum* var. *Golden Queen*, with twelve flowers on the spike. This plant has been previously dealt with by the Society, and in this case the award was confirmed (First-class Certificate). *O. crispum* *Backhousei*, from the same owner, received an Award of Merit. It is a fine type of *crispum*, not spotted. Cut flowers were sent of *Dendrobium* × *Clio* *Vine House* var.

T. STATTER, Esq., Whitefield (gr., Mr. Johnson), showed *Cypripedium* × *Francesii*, a cross between *C. Curtisii* × *C. callosum*.

R. ASHWORTH, Esq., Newchurch, staged a handsome collection of *Odontoglossums* and *Dendrobiums*. *Cypripedium* × *Maudiae* was among them. *Dendrobium* × *Cybele* var. *pulcherrima* was voted a Cultural Certificate, *D. × Cybele* var. *magnifica* a First-class Certificate, *D. nobile* var. *Ashlandensis* an Award of Merit, and the same award was made to *Odontoglossum* *crispum* *Ashworthae* var. *Ashlandensis* and *O. e. var.* *Emperor of India*. A Silver Medal was awarded for the group.

H. SHAW, Esq., Thirby, Cheshire (gr., Mr. Cliffe), sent a plant of *Laelio-Cattleya* × *Highburyensis*.

O. O. WRIGLEY, Esq., Bury (gr., Mr. Rogers), staged a grand lot of *Dendrobiums*, amongst which were *D. × Kenneth* var. *magnifica* (First-class Certificate), *D. × Rubens*, *D. nobile* var. *hololeuca*, pure white (First-class Certificate), *D. × Socius* (Award of Merit), *D. × Rolfeae* var. *rosea*. Silver-gilt Medal for the group.

MESSRS. SANDER & SONS, St. Albans, exhibited a fine variety of *Odontoglossum* *crispum* called *Imperator*. It is a fine form of the white type, with massive segments, and good shape (Award of Merit).

Mr. J. CYPHER, Cheltenham, staged a small group of plants, principally *Dendrobiums*, for which a Bronze Medal was awarded.

Mr. A. J. KEELING, Bingley, Yorks, also was awarded a Bronze Medal for a group of plants, *Dendrobium* × *Juno* and *D. × Luna* being amongst those shown.

Mr. W. HOLMES, Timperley, received Awards of Merit for *Dendrobium* × *Staffordi* var. *delicata* and *D. Staffordi* var. *Distinction*.

Mr. S. ALLEN, Sale, received an Award of Merit for a good form of *Dendrobium nobile*, and a Bronze Medal for a group. P. H.

NURSERYMEN AND MARKET GARDENERS' GENERAL HAILSTORM INSURANCE CORPORATION, LTD.

APRIL 11.—The seventh annual general meeting of the Nurserymen, Market Gardeners' and General Hailstorm Insurance Corporation, Ltd., was held at the registered office, 41 and 42, King Street, Covent Garden, London, W.C., on the above date, when Mr. Harry J. Veitch, the Chairman of the Corporation, presided. The report showed that the Corporation is still increasing its business. In 1896, the end of the first year of the Corporation, there were 235 policies in force on 10,408,161 square feet; whereas at the end of the year just ended 952 policies were in force on 31,797,734 square feet. The interest on invested funds, which now amount to £15,620 18s. 3d., is sufficient to pay 4½ per cent. on the paid up capital. A dividend was declared at the rate of 5 per cent. per annum, together with a bonus of 2½ per cent. on the paid up capital, whilst £1,170 was placed to reserve fund, and £569 11s. 8d. was carried forward. The Chairman stated that whilst a larger dividend might have been paid, the Directors thought it wiser to recommend the building up of such a reserve fund as to prevent the necessity of making further calls upon the shareholders when heavy claims are made on the Company.

He recalled the fact that in 1897 claims amounting to over £1,500 was made for damage done by a hailstorm in one afternoon, and that these claims would have amounted to a much greater sum had the hailstorm been as violent as that which occurred at Harpenden in 1895, when half the glass on one nursery was completely wrecked.

The shareholders present expressed their satisfaction at the satisfactory report, which showed that the Corporation is filling a useful position in the Insurance World, and is a great protection to glass-owners, who may now insure their houses and contents at reasonable rates.

HIPPEASTRUMS IN BLOOM AT MESSRS. J. VEITCH & SONS.

THE annual display of *Hippeastrums* (*Amaryllis*) is this year more extensive and more varied than we remember to have seen it previously. There is more bloom, and the flowering bulbs fill not only the central bed, but the side beds of the house. We noted a new break, a really white-ground flower with reticulated markings in varying shades of crimson. *Sylvan*, certificated at the last meeting of the Royal Horticultural Society, was one of this break, and others were remarked, differing in the amount and tints of the markings. This break was derived from a flower called *Topaz*, that was awarded a certificate by the Floral Committee in 1897. Numerous examples of the Champion strain were noted, well-formed selfs of various shades of crimson. The first Champion was certificated in 1890, Grand Monarch's year, of which latter a bulb was sold that year for £20. This was the commencement of the fine race of crimson selfs. There are still to be seen many examples of the Empress of India break, known by the greater length of the segments and of the tube; as also of the Leopold break, having the broadly expanding form of flower now so much liked. White flowers are very fine in many instances. They are mostly derived from *Her Majesty*, a flower having a white ground and a few crimson stripes. *Mysa*, a very deep crimson, is of this break. *Lady Buller*, white, with a wire edge of crimson and stripes of the same tint. We may mention a few of the more striking flowers open at the time of our visit:—*Titan*, rosy-red, derived from *Her Majesty*; *Patulus*, crimson, with a rosy shade; *Megara*, white and green, reticulated slightly with crimson; *Brotherus*, deep crimson self; *Margaris*, crimson, having a white flame in the lower part of the tube; *Juturna*, white, with red reticulation;

Kineton, scarlet, with much white at the bottom of the segments; and *Coriolanus*, a well-reflexed crimson self. The prevailing cloudy cool weather will extend the flowering season of this collection to several weeks—indeed, much longer than usual.

LAW NOTES.

CLAIM FOR PACKING PLANTS.

At the Clerkenwell County Court, on the 10th inst., Henry Williams, trading as B. Williams & Son, Victoria and Paradise Nurseries, sued C. Armstrong, The Grove, Cambridge, to recover the sum of £1 11s. 6d. for packing plants, labour and material, and cartage.

Mr. Butcher was solicitor for plaintiff, and Mr. Cubison for defendant.

From the plaintiff's case, it appeared that plants were entered at an auction sale, and bought by defendant. It was his custom to deliver goods to customers who purchased at such auctions, and considering the trouble, time, and material entailed in packing, he did not think the charge was at all unreasonable. Plants had to be packed in baskets, and required careful treatment; a quantity of wadding had to be used, as well as mats, paper, and string, for which he always charged his customers.

Defendant contended that the charge was altogether unreasonable. Ten or twelve shillings would have been quite sufficient, in his judgment.

The Judge gave a verdict in plaintiff's favour for £1 1s., without witnesses' costs.

MARKETS.

COVENT GARDEN, April 17.

[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 revise the list, and 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 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.]

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

| | s.d. | s.d. | | s.d. | s.d. |
|---------------------|------|------|------------------------|------|------|
| Arums, per doz. | 1 | 6-8 | Roses, <i>Maréchal</i> | 2 | 6-8 |
| Asparagus Fern, | 1 | 6-8 | Niel, per bunch | 2 | 6-8 |
| per bunch | 1 | 6-8 | Marguerites, Yel- | 1 | 6-8 |
| Azaleas, per doz. | 4 | 0-6 | low, per doz. | 1 | 6-8 |
| Carnations, per | 1 | 0-2 | Mermet Roses, per | 2 | 0-5 |
| bunch | 1 | 0-2 | bunch | 2 | 0-5 |
| Cattleyas, per | 9 | 0-12 | Mignonette, per | 3 | 0-6 |
| dozen | 9 | 0-12 | dozen bunches | 3 | 0-6 |
| Eucharis, per doz. | 3 | 0-4 | Narcissus, per | 1 | 6-4 |
| Freesias, p. doz. | 2 | 0-4 | dozen | 1 | 6-4 |
| Gardenias, per | 1 | 6-2 | Pelargoniums, | | |
| dozen | 1 | 6-2 | Scarlet, per | | |
| Iris, per dozen | 1 | 0-1 | dozen | 3 | 0-6 |
| Jonquils, per | 1 | 3-1 | Roses, Red, gen- | | |
| dozen | 1 | 3-1 | eral, per doz. | 1 | 0-1 |
| Lilium Harrisii, | 3 | 0-6 | blooms | 1 | 0-1 |
| per dozen | 3 | 0-6 | Smilax, p. bunch | 1 | 6-3 |
| Lily of the Valley, | 6 | 0-8 | Tulips, all colrs., | 4 | 0-8 |
| dozen bunches | 6 | 0-8 | per doz. bunchs. | 4 | 0-8 |
| Maidenhair Fern, | 4 | 0-6 | Roses, White, per | 2 | 0-3 |
| dozen bunches | 4 | 0-6 | bunch | 2 | 0-3 |

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s.d. | s.d. | | s.d. | s.d. |
|-------------------|------|------|-------------------|------|------|
| Apples, home- | | | Cranberries, per | | |
| grown, Wel- | | | quart | 8 | 0-0 |
| lingtons, per | | | Figs, per dozen | 6 | 6-12 |
| bushel | 8 | 0-10 | Grapes, new Ham- | | |
| — Californian, | | | burgh, per lb. | 4 | 6-8 |
| cases | 12 | 0-16 | — B., per lb. | 2 | 0-2 |
| — Australian | | | — Almeida, per | | |
| — Tasmanian & | | | 12 lb. | 6 | 0-10 |
| Victorian, per | | | Lemons, per case | 6 | 6-15 |
| case | 10 | 0-16 | Oranges, Denia, | | |
| — Large Cookers, | | | per case | 9 | 6-18 |
| per bushel | 6 | 0-7 | — Blood, p. case | 5 | 6-0 |
| Bananas, bunch | 8 | 0-12 | — Tangierine, | | |
| — loose, p. doz. | 1 | 0-1 | per case (100) | 4 | 0-0 |
| Capo Fruit— | | | Pines, each | 2 | 6-4 |
| — Pears, per case | 5 | 0-0 | Sapucala Nuts, | | |
| Chestnuts, bag | 15 | 0-16 | per lb. | 1 | 0-0 |
| Cobnuts, Kentish, | | | Strawberries, A., | | |
| per lb. | 1 | 0-0 | per lb. | 1 | 0-5 |
| Cranberries, case | 12 | 0-0 | — B., per lb. | 1 | 6-2 |

PLANTS IN POTS—AVERAGE WHOLESALE PRICES.

| | s.d. | s.d. | | s.d. | s.d. |
|--------------------|------|------|----------------------|------|------|
| Acacias, per doz. | 6 | 0-8 | Evergreens, vars., | | |
| Adiantums, per | | | per dozen | 4 | 0-18 |
| dozen | 5 | 0-7 | Ferns in variety, | | |
| Arbor Vite, per | | | per dozen | 4 | 0-18 |
| dozen | 6 | 0-36 | Genistas, pr. doz. | 6 | 0-8 |
| Arum Lilies, per | | | Heliotrope, p. doz. | 6 | 0-8 |
| dozen | 4 | 0-6 | Hyacinths, white, | | |
| Aspidistras, per | | | per dozen | 10 | 0-12 |
| dozen | 18 | 0-38 | — colours, p. doz. | 8 | 0-10 |
| Azaleas, per doz. | 18 | 0-30 | Hydrangeas, per | | |
| Cannas, per doz. | 18 | 0-0 | dozen | 9 | 0-24 |
| Cinerarias, per | | | Marguerites, p. doz. | 6 | 0-6 |
| dozen | 4 | 0-6 | Narcissus, single, | | |
| Clematis, per doz. | 12 | 0-0 | per dozen | 6 | 0-8 |
| Crotons, per doz. | 18 | 0-30 | Palms, var., each | 1 | 0-20 |
| Cyclamens, per | | | Pelargoniums, | | |
| dozen | 8 | 0-12 | scarlet | 6 | 0-8 |
| Daffodils, double, | | | — white | 6 | 0-8 |
| per dozen | 6 | 0-8 | Roses, various, doz. | 9 | 0-12 |
| Dracenas, var., | | | Spiraeas, per doz. | 5 | 0-8 |
| per dozen | 12 | 0-30 | Sweet Briars, per | | |
| Ericas, per dozen | 6 | 0-18 | dozen | 3 | 0-4 |
| Euonymus, vars., | | | Tulips, all colours, | | |
| per dozen | 6 | 0-18 | per dozen | 0 | 9-1 |

VEGETABLES.—AVERAGE WHOLESALE PRICES.

| | s.d. | s.d. | | s.d. | s.d. |
|---------------------|------|------|---------------------|------|------|
| Artichokes, Globe, | | | Onions, new, green, | | |
| per dozen | 2 | 0-2 | doz. bunches | 1 | 6-2 |
| Jerusalem, p. | | | — English, per | | |
| sieve | 1 | 0-1 | cwt. | 6 | 0-7 |
| Asparagus Spruce, | | | — in bags | 5 | 0-6 |
| bundle | 0 | 8-0 | — Egyptian, bag | 6 | 0-6 |
| — English | 4 | 0-0 | — picklers, per | | |
| — Paris Green | 6 | 0-0 | sieve | 2 | 6-3 |
| — Spanish | 1 | 2-0 | Parsley, per doz. | | |
| — various | 0 | 6-3 | bunches | 4 | 0-5 |
| Beans, dwf., house, | | | — sieve | 2 | 0-2 |
| per lb. | 1 | 0-0 | Parsnips, p. cwt. | | |
| — Madeira, per | | | bag | 3 | 0-3 |
| basket | 2 | 6-0 | Peas in 1 lb. bags | 0 | 5-0 |
| Beetroots, per | | | — in flats | 5 | 6-6 |
| bushel | 2 | 6-3 | — Jersey, per lb. | 1 | 6-2 |
| Cabbage, p. tally | 5 | 0-7 | Potatoes, per ton | 50 | 0-90 |
| Carrots, per doz. | | | — new, per lb. | 0 | 2-0 |
| bunches | 2 | 6-3 | — Frame, lb. | 0 | 4-6 |
| — unwashed, per | | | — new Tenerife, | | |
| bag | 3 | 0-5 | per cwt. | 12 | 0-16 |
| — New, French, | | | Radishes, p. doz. | | |
| per bunch | 1 | 0-0 | bunches | 0 | 6-1 |
| Cauliflowers, per | | | Rhubarb, Yorks, | | |
| dozen | 2 | 0-3 | per dozen | 0 | 6-1 |
| — tally | 10 | 0-14 | — outdoor, per | | |
| Celery, per dozen | | | dozen | 1 | 6-3 |
| bundles | 10 | 0-12 | Salad, small, pun- | | |
| Chicory, per lb. | 0 | 2-0 | nets, per doz. | 1 | 3-0 |
| Coleworts, bushel | 1 | 6-0 | Seakale, per doz. | | |
| — bag | 2 | 0-3 | punts | 12 | 0-15 |
| Cress, per dozen | | | — natural, doz. | 10 | 0-12 |
| punnets | 1 | 3-0 | Shallots, per lb. | 0 | 2-0 |
| Cucumbers, doz. | 2 | 0-3 | Spinach, English, | | |
| Endive, new | | | bushel | 2 | 6-3 |
| French, doz. | 1 | 0-1 | Stachys, per lb. | 0 | 3-0 |
| Garlic, per lb. | 0 | 3-0 | Tomatoes, Canary, | | |
| Horseradish, fo- | | | boxes | 3 | 6-4 |
| reign, bunch | 1 | 3-1 | — English, p. lb. | 1 | 0-1 |
| Leeks, 12 bunches | 2 | 0-2 | Turnip-Tops, per | | |
| Lettuces, Cos, per | | | bushel | 1 | 0-0 |
| dozen | 3 | 0-4 | — bag | 2 | 6-2 |
| — Cabbage, per | | | Turnips, per doz. | | |
| dozen | 0 | 6-1 | bunches | 2 | 0-0 |
| Mint, new, per | | | — bag | 2 | 6-3 |
| bunch | 0 | 4-0 | — new, French, | | |
| Mushrooms, house, | | | bunch | 1 | 0-1 |
| per lb. | 0 | 7-0 | Watercress, per | | |
| Onions, case | 7 | 0-0 | doz. bunches | 0 | 6-8 |

REMARKS.—Grape-fruits, in cases of sixty, 15s. New Hamburg Grapes are now on the market. Old Potatoes are a slow trade. Some good samples of Algerian Kidney Potatoes in boxes and barrels at 12s. per cwt. Home-grown Beets are scarce. Cucumbers are cheap, and Radishes, both long and round-rooted varieties are good.

POTATOS.

Dunbar Main Crop, 90s.; Up-to-Date, 80s. to 85s.; and other varieties, 45s. to 80s. Seed in variety, at various prices. John Bath, 32 & 34, Wellington Street, Covent Garden.

FRUITS AND VEGETABLES.

GLASGOW, April 16.—The following are the averages of the prices during the past week:—Apples, Californian Newtown, 9s. 6d. to 10s. per case; Nova Scotia Baldwin, 19s. to 24s. per barrel; Maine, 20s. to 24s. do.; Canadian, 23s. to 26s. do.; Oranges, Valencia, ordinary, 420s. to 480s. per box; do., large 420s. to 480s. do.; extra large do., 13s. to 14s. do.; large 71s. to 11s. do.; Grapes, 1s. 6d. to 6s. per lb.; Onions, Egyptian, 6s. 3d. to 7s. per box; Mushrooms, 1s. per lb.

LIVERPOOL, April 16.—Wholesale Vegetable Market.—Potatoes, per cwt.: Up-to-Date, 2s. 3d. to 2s. 9d.; Main Crop, 2s. 9d. to 3s. 9d.; Lyndy Grays, 2s.; Bruce, 2s. 2d. to 2s. 8d.; Turnips, 1s. to 1s. per dozen bunches; Swedes, 1s. 2d. to 1s. 4d. per cwt.; Carrots, 5s. to 5s. 6d. do.; Onions, foreign, 6s. 6d. to 6s. 6d. do.; Parsley, 5d. to 10d. per dozen bunches; Cucumbers, 3s. to 3s. 6d. per dozen; Cauliflowers, 1s. to 1s. do.; Cabbages, 8d. to 2s. do. St. Johns' Potatoes, 1s. per peck; do. new, 2d. to 6d. per lb.; Grapes, English, 7s. 6d. do.; do., foreign, 6d. to 8d. do.; Apples, 2d. to 4d. per lb.; Tomatoes, 4d. to 6d. do.; Asparagus, 2s. to 3s. per bundle; Cucumbers, 4d. to 6d. each; Mushrooms, 1s. 4d. per lb.

Birkenhead: Potatoes, 10d. to 1s. per peck; do., new, 4d. to 8d. per lb.; Peas, 6d. to 8d. do.; Asparagus, 4s. to 6s. per 100; Cucumbers, 4d. to 8d. each; Grapes, English, 6s. per lb.; do. foreign, 8d. to 1s. do.; Mushrooms, 1s. to 1s. 6d. per lb.

SEEDS.

LONDON: April 16.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that notwithstanding a thin attendance on to-day's market, there is still a fair seasonable sowing demand for field seeds generally, and stocks all round are being rapidly reduced. Fine red Cloverseed especially is getting scarce, and is consequently very firm. There is no alteration this week in either Alsike or Trefoil, but White continues on a down grade. Sainfoin, and more particularly Lucerne and Timothy, owing to the exhaustion of supplies, are substantially dearer. Meantime, Italian and perennial Rye-grasses move adversely to holders. Very little attention is just now given to either Mustard or Rapeseed, whilst the business passing in bird seeds is small. Linseed keeps steady, and Blue Peas and Haricot Beans are stronger on account of the Budget. The Board of Trade Returns give the imports into the United Kingdom for the first three months of this year, of Clover and Grass-seeds as 129,836 cwt., value £274,127; as against 128,764 cwt., value £285,143 for the corresponding period of 1901.

CORN.

AVERAGE PRICES OF British Corn (per imperial qr.), for the week ending April 12, 1902, and for the corresponding period of 1901, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

| Description. | 1901. | | 1902. | | Difference. |
|---------------|-------|----|-------|----|-------------|
| | s. | d. | s. | d. | |
| Wheat | 26 | 5 | 27 | 5 | + 1 0 |
| Barley | 25 | 0 | 26 | 7 | + 0 7 |
| Oats | 18 | 1 | 21 | 0 | + 2 11 |



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period April 6 to April 12, 1902. Height above sea-level 24 feet.

| 1902. | DIRECTION OF WIND. | TEMPERATURE OF THE AIR. | | | | TEMPERATURE OF THE SOIL AT 9 A.M. | | | |
|---------|--------------------|-------------------------|-----------|----------|---------|-----------------------------------|-----------------|-----------------|------------------------------|
| | | At 9 A.M. | | DAY. | | At 1-foot deep. | | At 2-feet deep. | |
| | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. | At 1-foot deep. | At 2-feet deep. | At 4-feet deep. | LOWEST TEMPERATURE ON GRASS. |
| | | deg. | deg. | deg. | deg. | deg. | deg. | deg. | deg. |
| SUN. 6 | N.N.W. | 42 | 37 | 48 | 37 | 5 | 45 | 14 | 5 |
| MON. 7 | N.N.E. | 40 | 36 | 45 | 29 | 0 | 43 | 8 | 18 |
| TUES. 8 | N.N.E. | 39 | 36 | 43 | 37 | 0 | 43 | 5 | 27 |
| WED. 9 | N.N.E. | 41 | 37 | 46 | 35 | 4 | 42 | 4 | 23 |
| THU. 10 | N.N.E. | 41 | 37 | 46 | 37 | 5 | 42 | 4 | 33 |
| FRI. 11 | E.N.E. | 45 | 40 | 49 | 35 | 8 | 42 | 6 | 29 |
| SAT. 12 | E.S.E. | 44 | 41 | 52 | 40 | 2 | 43 | 4 | 38 |
| MEANS | ... | 42 | 38 | 47 | 36 | 1 | 43 | 4 | 28 |

Remarks.—A dull, sunless week, with bleak north-east wind.

THE WEATHER IN WEST HERTS.

The past week has been rather a cold one. On two days the temperature in the daytime was several degrees warmer than is usual in the middle of April, but otherwise the readings, both during the daytime and at night, were as a rule low. On five nights the exposed thermometer registered temperatures below the freezing-point, and on the coldest night it indicated 8° of frost. The temperature of the ground, both at 1 and 2 feet deep, is now about seasonable. Rain

fell on three days, but the total measurement amounted to less than a quarter of an inch. No measurable quantity of rain-water has come through either percolation gauge for more than a week. There were good records of sunshine on the 13th and 14th, but during the previous six days the sun shone for altogether only about twelve hours. The winds were mostly light, and came principally from some easterly point of the compass. The amount of moisture in the air was, as a rule, more than is seasonable. A selected tree of Blackthorn first showed an open blossom on the 15th, which is two days later than its average date in the previous eleven years, but six days earlier than last year. E. M., Berkhamsted, April 15, 1902.

Obituary.

MUNGO TEMPLE.—As these pages are passing through the press, we regret to learn of the death, on the 16th inst., of our old correspondent and Scottish representative. We must revert to the subject next week.

ANSWERS TO CORRESPONDENTS.

**** EDITOR AND PUBLISHER.**—Our correspondents would obviate delay in obtaining answers to their communications, and save much 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 all communications intended for publication, or referring to the literary department, should be directed to the EDITOR. The two departments, publishing and editorial, are quite distinct, and much unnecessary confusion arises when letters are misdirected.

BEETLE: R. B. The creature sent is the larva of one of the two species of cockchafer met with in this country. They are injurious in the caterpillar state, feeding on the roots of plants. If they are numerous, and you can dig the ground, do this, and turn in the chickens, ducks, &c. Their underground existence lasts for three years.

CATCHING MOLES: F. C. We know of no sort of poison that could be used to destroy moles; and indeed, unless the little creatures are very numerous, we should not like to destroy them. Of course, on the trim lawn and in the flower beds and borders, they are a great nuisance, but a boy or an old man furnished with a spud or lady's spade would catch more moles in a day than could be trapped in a week. He must go quietly about all day long, watching the places where the moles run their tunnels, and when he sees the ground being heaved upwards, he must make a quiet dash with the spud, and with an upward movement of the tool throw out the little beast and dispatch it quickly without cruelty.

CORRECTION: CENTROPOGON LUCYANUS. It was stated in our Calendar for Plants under Glass last week, that this plant "should be treated similarly to Hibiscus," but that did not apply to planting in the open air in the summer, but to propagation and general indoor's treatment only.

FIG-ROOT: F. B. The Fig is attacked by *Cercospora Bolleana*. See *Gard. Chron.*, July 7, 1900, p. 5.

GLASSHOUSE HEATING BY MEANS OF HOT-WATER: Pipeheat. In order to maintain a warmth of 65° when the outside temperature has sunk to 10°, i.e., 22° of frost, and nothing less will be safe, 305 feet of 4-inch piping will be necessary, taking into consideration the fact that 30 feet of piping are placed beneath a propagating pit, and not available for heating the air of the forcing-house.

NAMES OF PLANTS: C. K. M. 1, *Bulbophyllum* species, but we cannot say which without seeing flower. When in bloom send a bulb with flowers; 2, *Dendrobium Pierardi*, if the stems are long and slender; if thick and comparatively short, it is *D. primulinum*. The lip of the flower sent is withered and the best feature lost; 3, *Dendrobium Devonianum*;

4, *Cypripedium Boxalli*; 5, *Dendrobium fimbriatum oculatum*; 6, *Scelaginella Mertensii*.—R. M. R. All varieties of *Dendrobium Wardianum*; but two of them are imperfectly developed.—A. L. 1, *Odontoglossum maculatum*; 2, *Odontoglossum pulchellum*; 3, *Cypripedium Mastersianum*; 4, *Cochlidium vulcanica*; 5, *Oncidium flexuosum*.—H. W. C. The plant indicated is *Kochia scoparia*.—J. H., Inverurie. *Laelia flava*, the yellow; *Phaius grandifolius*, the other.—James, Perth. 2, *Abutilon megapotamicum*; 3, *Nerium Oleander*; 4, *Bambusa Fortunei* variegata; 5, *Veronica Andersoni*; 6, *Fuchsia procumbens*.—E. J. H. *Epimedium pinnatum*.—J. L. I. 1, *Oncidium pulvinatum*; 2, *Daphne Mezereum*; 3, *Acalypha tricolor*; 4, *Cecus Weddelliana*; 6, *Pilea muscosa*; 6, *Poa trivialis* variegata.—Oncid. 1, *Daphne Mezereum*; 2, *Babiana plicata*.—Amateur. *Dendrobium nobile*; the faded, yellow-tinted flower is peculiar if the colour was the same when fresh.—W. T. 1, *Callistemon floribundus*; 2, *Asparagus deflexus*; 3, *Ilex microphyllus*; 4, *Corydalis tuberosa*; 5, *Helleborus*, garden variety.—Fern. *Lomaria spicant*.—Rosa. Should send better specimens, and remember that specimens such as he sends are likely to be unrecognisable when we receive them.—*Doronicum*. *Abies excelsa* var. *Claibrassiliana*; *Ruscus aculeatus*, Butcher's Broom; *Ruscus hypophyllum*, the broad-leaved one.

PELARGONIUM CUTTINGS: C. & S. If you will send us the name of the advertiser, we will call the attention of the Publisher to the matter.

PRIMROSE: G. M. A leafy condition of the calyx is by no means uncommon.

TASMANIAN APPLES: Tasmania. If you will scan an announcement on p. 261 of the present issue, you will be enabled to form an idea of the dates of arrival of the various consignments of Tasmanian and Australian fruits. Many of the sales which take place will be effected by public auction at Covent Garden, and some consignments go to fruit merchants in the City.

TRANSIT OF CUTTINGS OF FRUIT-TREES FROM AMERICA AND INDIA TO CENTRAL AFRICA: L. C. B. We think that so large a quantity of moss, earth, and cuttings would get extremely hot by fermentation, and destroy the life of the cuttings in their passage through the tropics, and in any case airtight cases are detrimental, excepting for very dry seeds (artificially dried). A better mode would be to encase each cutting, or small bundles of say four to six, in damp clay, and pack in small packages, surrounding them with canvas or wood.

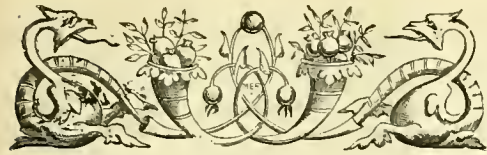
WORMS IN SOIL: C. E. J. What you have sent are the larvæ of a species of Diptera or house-fly order, such as are often found swarming in "green" manure from pig-stys; they are not known to be injurious to plant-life. A closely allied species has been found in wasps nests, feeding on the dead larvæ at the bottom of the nest cavity. You should keep the land well stirred and trench deeply in the autumn. The flies will probably hatch in summer and fly away to some rotting material; they are not likely to reproduce their species on the soil so long as it is free from foul manure. P. W.

COMMUNICATIONS RECEIVED.—M. E. M. (we have already received a note).—W. Miles & Co.—J. Plummer, Sydney—R. L. F.—A. D. S.—R. W. J. Godfrey—B. A. & Co.—F. W. B.—Max Leichtlin, Baden-Baden—The Countess of Warwick—R. I. L.—J. R. J.—G. P.—Academy of Natural Science, Philadelphia—C. Palmer—J. L.—W. W.—B. H.—Dr. A. H.—Peter Barr, Cape Town—E. C.—F. G.—M. C.—W. W.—E. C.—A. D. M.—Dr. Udo Dammer, Berlin—R. D.—G. P.—G. M.—E. O. G.—H. S.—C. P.—B. G.—Canada—W. T. H.—W. A. Miller (with thanks)—Hyacinth—G. Doolan—Daffodil—W. H.—W. Kemp—H. M.—Wills (next week)—Expert—D. B.—T. D. E.—W. R.—W. H. T.—J. M. Sinclair—F. G.—The Four Oaks Nursery and Garden Sundries Co.—J. G.—W. B. H.—R. D.—W. H. D.—J. S.—W. M.—H. H.—B. W.—J. D.—W. H. C.—A. R. B.—W. E. B.—R. P. B.

PHOTOGRAPHS RECEIVED WITH THANKS.—F. C. T., Foo-Chow—R. I. L.



SWEET-SCENTED PELARGONIUM AT GUNNERSBURY HOUSE, GARDENS, ACTON: PHOTOGRAPHED BY J. GREGORY.



THE

Gardeners' Chronicle

No. 800.—SATURDAY, APRIL 26, 1902.

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VERNAL FLOWERS.

NO period is so beautiful to the fancy, or so much impressed on the memory, as that of spring, for then the "Stars of Earth" (as the great Goethe so tenderly called the flowers) reappear, as if to emphasise that faith in the future, which vivified by experience, abode with us so steadfastly, amid all atmospheric trials and tribulation, through the weary winter hours.

Seldom have the vernal flowers been more radiant or luxuriant than they have been this year. The Snowdrops and their strongly contrasted successors, the brilliant Crocuses, have flowered profusely; and as the season was somewhat later than usual by reason of a sudden visitation of frost and snow, thereby delaying the advent of the first fair flowers of January, they bloomed contemporaneously. Hardly had they begun to show signs of decadence, when the first of the Daffodils, the Scottish Garland Lily, began to unfold its lustrous flowers. Since that period, other forms, if possible of greater beauty, have dawned upon our gaze; conspicuous among which have been *Narcissus Empress*, an absolutely perfect "bicolor" flower; *N. grandis*, almost equally fine; *N. Horsfieldi*; and the great Sir Watkin, which is I think especially fascinating when in bud just previous to expansion, but is at all stages supremely attractive. It is a veritable giant among Daffodils, just as *Lilium giganteum* is among contemporaneous Lilies, and can be easily recognised from a considerable

distance by reason of its commanding aspect. Emperor is just preparing to reveal his imperial beauty: *N. Barri* conspicuous is at a similar stage of floral evolution. The *Leedsii* varieties, with their starry petals of the most delicate beauty, are in exquisite bloom. Very graceful are the miniature flowers of the white sweet scented Violets, which delight in moist places of the garden with partial shade. Soon we shall have the richly fragrant *Auricula*, followed by the much-loved Lily of the Valley, nestling like meekness, a rare human characteristic, among its long and luminous leaves.

On April 1, *Prunus Pissardi*, a Persian Plum which greatly adorns the centre of my garden, was already disclosing its fragile white blossoms, and thereby strongly asserting its claim to be accounted the first of flowering trees. Even without its floral treasures, which this season are unusually abundant, it is very precious in virtue of its foliage, which is highly decorative. The Canary Creeper, flowering through its branches amid their dark, chocolate-coloured leaves, produces a memorably artistic effect. The other flowering trees, such as the Early Rivers and Black Eagle Cherries, the Czar Plums, and Denniston's Superb Gage, are also far advanced, and the exquisitely beautiful *Pyrus Malus floribunda* will follow in their train. A profusion of blossom may be anticipated from the Apples and Pears, which are full of floral promise; they had the great advantage of being thoroughly ripened by the heat of last summer, which was at certain periods quite tropical in its influence.

Oriental and occidental Lilies, the former especially, are growing with quite unusual rapidity. This is especially true of *Lilium candidum*, a native of the Levant; *Lilium Henryi*, which comes to us from China; and the Japanese *Lilium auratum* var. *platyphyllum*, which grows almost as strongly, and is quite as florally effective, as *Lilium giganteum*, while it is even more reliable. My latest acquisition is *Lilium Alexandre*. David R. Williamson.

ORCHID NOTES AND GLEANINGS.

"LINDENIA."

NUMBERS 11 and 12, completing the sixteenth volume, or the sixth volume of the second series of this excellent work on Orchids, has fine coloured plates of—

CATTLEYA × *CLYMEKE* (C. Warscewiczii × C. Rex ♂).—The flowers are large; sepals and petals white. Lip white, marked with yellow at the base, the front being of a rich purple, with narrow white margin.

CATTLEYA × *MEMORIA BLEUI* (Aelandie × *granulosa*).—A fine flower, with greenish sepals and petals, evenly marked with chocolate colour. Lip white, with light purple veining, the same colour also appearing in the column.

CATTLEYA *LABIATA PERFECTA*.—A large flower of glowing rose-purple colour, with yellow disc to the lip.

CYPRIPEDIUM × *STEPMANIE* (Lecanum × *villosum*).—Resembling a large form of C. × *Leander*. Flowers yellow, with reddish and purple markings, and white-tipped dorsal sepal.

DENDROBIUM PHALENOPSIS *LINDENIE*.—A large white flower, with slight purple markings on the tips of the petals, and darker ones on the front of the lip.

ONCIDIUM VARIOSUM *MOORTEBEKEENSE*.—A remarkable and showy variety, with bright yellow flowers having a conspicuous chestnut-red mark on the lip.

RENANTHERA MATUTINA.—A fine old Javan species, with branched spikes of red and yellow flowers.

VANDA PARISHII.—Sepals and petals yellow, blotched with brown; front of lip purple. It is singular that this typical species is now more rare than the almost wholly rose-purple form discovered by Boxall much more recently.

THE WILD FORM OF PRIMULA SINENSIS.

THE plant which is considered to be the parent form of the cultivated *Primula sinensis*, Sabine, has only as yet been found in one locality. It grows wild in the gorges of the Yangtze, close to Ichang. In the Kew Herbarium there are specimens (Nos. 1,103 and 1,292) which were gathered by me, and from which the illustration (fig. 84, p. 270) now given is drawn. Père Delavay on his way to Yunnan collected some specimens in the same place; and some years previously Mr. Watters, who was Consul at Ichang at the time, sent the plant to Hance.

The habitat and mode of growth is remarkably different from what we find in the cultivated forms. The wild plant grows on the ledges of rocky cliffs of limestone, in spots where there is no soil, and practically no moisture, exposed to the sun, and living amidst the decaying remains of former generations of the plants. These ledges of *Primula* are often continuous for hundreds of feet, and in December and January, when the flowers appear, present a scene of great beauty. The scent of the leaves is very strong, and can be perceived at once on entering any of the ravines where the ledges occur. The flowers are pinkish, with a yellow ring around the neck of the corolla.

The wild form was introduced into cultivation by seeds sent home by Mr. Pratt, the naturalist, who collected them at Ichang; and an account and figure of the home-grown wild plant were given by Sir Joseph Hooker in the *Botanical Magazine*, tab. 7559 (1897).

The wild plant differs obviously from the cultivated one in not having the calyx so much inflated; but this is a variable point, as shown in the diagrams given in this Journal in 1889, January 26, p. 115, fig. 16. The leaves of the wild plant are small and stalked, most of them being roundish and lobed, whilst the others are elongate. The margin of the leaves is crenate, and there are never acute or mucronate serrations, such as occur in many of the cultivated varieties. The involucre bracts are always entire, linear or lanceolate, and are never incised or dentate as in some cultivated forms. The petals of the corolla are notched, never fimbriate. The most remarkable peculiarity of the wild plant is the creeping and branched root-stock.

The cultivated plant was introduced from Canton, and there is no history of its origin to be obtained from Chinese books. *Primulas* occur especially in the western mountainous regions of China in numerous species, but they never have attracted Chinese gardeners; and it was Mr. Maries, e.g., who cleverly saw the possibilities of *Primula obconica*, another Ichang plant, which has made so much progress under cultivation.

However, in the great Chinese illustrated flora, the *Chih-Wu-Ming*, two species of *Primula* are figured. *Primula Forbesii*, Franchet, is shown in this work in vol. xxix., folio 8; and it is said correctly to occur in fields in Yunnan. The name given to it, Pao-ch'un, may be translated "Herald of the Spring." In the same volume, folio 18, there is a figure and description of what I take to be a cultivated form of *Primula sinensis*. The author calls the plant the Tibetan *Primula* (Tsang Pao-ch'un); but, in explanation of the term, says that Yunnan is near Tibet, and flowers there are, on that account, apt to be called Tibetan. In other words, the name is of no value for defining the home of the plant. The author says that it is cultivated in gardens in Yunnan, and that the leaves are like those of the Hollyhock, having many

points and clefts. The flowers come at the beginning of spring, and are like those of *P. Forbesii*, but larger. The figure shows sharply dentate or serrate leaves, and an inflated calyx; while the woody root-stock is absent. It is evidently a cultivated form like that introduced into Europe from Canton.

another article I hope to show that several other plants cultivated by the Chinese have the same history. *Augustine Henry*.

[The history of the introduction of the wild form of the Chinese Primrose into cultivation is given, with illustrations, in our volume for 1892, January 2, p. 13, fig. 2. Ed.]

ances and old methods have been improved on, the Orchid-houses especially having been literally brought up to date.

Most of the Orchid-houses are new and excellent in every respect, as is shown by the splendid condition of the plants grown in them. Looking through the houses of Odonto-



FIG. 84.—WILD PLANT OF *PRIMULA SINENSIS*, COLLECTED AT ICHANG, CHINA, BY DR. AUGUSTINE HENRY. (SEE P. 269.)

All the evidence we have, then, goes to show that probably *Primula sinensis* was discovered by some Chinese traveller at Ichang, and from there was introduced into gardens at the great centres of refinement, like Soochow and Nanking, possibly centuries ago. In

ORCHIDS AT WESTONBIRT. TETBURY.

WESTONBIRT is one of the oldest Orchid establishments in the country, and as such special interest attaches to it. But old appli-

glossums, every plant bears the stamp of good health and vigour, and it is difficult to realise the fact that only a few years ago these "cool-house" Orchids were considered very difficult to manage successfully, and even yet there are amateurs who for no reason evident to the

observer fail to grow them well. The plants were chiefly bought as freshly imported, or unflowered semi-established, and the progress they have made is readily ascertained by an examination of the pseudo-bulbs, these showing a rapid increase in size, some of the older

have secured awards at the Royal Horticultural Society; the richly coloured *O. × loochristiense* Lady Victoria Grenfell, and a noble form of *O. × elegans*, are fine examples. Also now in flower are a fine lot of plants of the best type of *O. crispum*, among which are

a very fine display of flowers, some of the fine forms of *D. nobile* being still in flower; also a very varied collection of hybrids of the *D. × Ainsworthi* and *D. × splendidissimum grandiflorum* type. The most beautiful white with purple eye is *D. × Apollo album*; and



FIG. 85.—THE WILD FORM OF *PRIMULA SINENSIS* AFTER ONE YEAR'S CULTIVATION. FLOWERS PALE ROSY-LILAC; POLLEN MAGN. 300 DIAM. (SEE P. 269.)

plants seeming to have reached the maximum, and far exceed the imported pseudo-bulbs.

The ventures in imported plants of *Odontoglossums*, too, have been highly satisfactory in the matter of hybrids bought as *O. crispum*. Of these, two splendid forms of *O. × Adrianæ*, now in flower—*O. × A. Countess of Morley*, and *O. × A. Mrs. Robert Benson*, and both of which

some very beautiful rose-tinted and spotted forms; good *O. Hallii*, *O. triumphans*, *O. luteo-purpureum*, *O. nebulosum*, *O. cirrosum* *Pescatorei*, and other species; also *Ada aurantiaca*, and *Sophranitis grandiflora*, which show up very effectively among the *Odontoglossums*.

Turning to the *Dendrobium*-houses we found

the largest and finest coloured flowers in this class are given by *D. × rubens grandiflorum*, and *D. × r. magnificum*. Mr. Cookson's fine *D. × Sibyl magnificum* appears with a densely flowered pseudo-bulb, 3 feet in length—a fine example of good cultivation; *D. × Venus*, *D. × Juno*, *D. × xanthocentrum*, *D. × Clytio*, *D. × Dominicanum*, *D. × Cybele*, *D. × Sun-*

ray; varieties of *D. × melanodiscus*, and many other hybrids are in bloom; fine plants of *D. Wardianum*, *D. crassinode*, *D. nobile album*, of the largest pure white type; and other good forms of *D. nobile*. The vigour of most of these *Dendrobiums* is surprising. The very large specimens of *D. Dalhousieanum* having stems six feet high and seven or eight fine spikes of flower on each plant. The plan adopted with them is to grow as many as possible suspended from the roof of the houses to afford them a liberal treatment, a warm, moist period of growth, and a cooler, dry resting period while ripening their pseudobulbs. The same plan is followed with a large number of plants of *Dendrobium Phalaenopsis* *Schroderianum* now about to make a fine display of flowers; but in the case of these they are kept rather warmer during the resting season than *D. nobile*, and others of similar nature.

INTERMEDIATE HOUSES.

In several of these, the *Cypripediums* form the chief feature, there being a fine collection of the rare and beautiful varieties of *C. insigne*, including some of *C. i. Sanderi* and *C. i. Harefield Hall* variety, which were obtained as small specimens, and now of large proportions; *C. bellatulum* and *C. b. album*, as well as the hybrids from it, are thriving plants. In bloom there were observed forms of *C. × Lathamianum*, *C. villosum*, *C. Boxalli*, *C. × nitens*, *C. × Calypso*, *C. exul*, *C. × Mrs. Tautz*, the very finest of the hybrids, with a family likeness to *C. insigne punctatum violaceum*, wonderfully improved upon; *C. Rothschildianum*, one fine specimen bearing two spikes of three and four flowers respectively; *C. × microchilum*, *C. callosum Sanderi*, and the fine hybrid of it; *C. × Maudiae*, *C. × Winnianum*, besides a large number of interesting plants in bud.

THE LOBBIES.

In one of these some immense plants were observed of *Sobralia macrantha*, and good ones of the large and richly-coloured *S. Holfordi*, the yellow *S. xantholeuca*, the rare *S. Lindeni*, *S. macrantha alba* or *Kienastiana*, *S. × Veitchi*, and other *Sobralias*. Of the more prominent plants in the other houses we remarked the beautiful *Zygo-Colax × Wiganianus superbus*, an excellent batch of *Mitonia vexillaria*, and other *Mitonias*; a *Cymbidium eburneum*, with six flower-spikes; some good *C. × Lowio-eburneum*, and *C. Lowianum*, one grand variety of which has an intensely bright brownish-ruby-red front to the lip; *Celogyne cristata alba*, well in flower; *Odontoglossum pulchellum*, and *O. Rossii majus*, very pretty; a fine lot of *Lælia anceps*, consisting principally of white-flowered varieties, sending up a fine show of flower-spikes; some good *Cattleya Trianei*, *C. Schroderi*, and *C. S. alba*; some bright flowers of *Lælia Jongheana*, and a promising show of *Lælia pumila*, *L. purpurata*, *L. tenebrosa*, and other of the showy *Cattleyas* and *Lælias*.

MISCELLANEOUS ORCHIDS.

Suspended in a cool intermediate-house large specimens of *Vanda Kimballiana*, which were so much admired when last in flower, and shown at the Royal Horticultural Society, were observed. These plants are kept cooler, and more air is admitted to them than is usual with most cultivators, and the result is increased vigour year by year, while in most other gardens the plants decline in health.

An old collection of Orchids, or a modernised old collection, is always interesting, as specimens which have been on the place for many years are to be found in it, some of them rarer now than they were when originally purchased.

But fashion changes the aspect of an Orchid collection as it does many other things, and the gigantic specimens of *Aërides odoratum majus*, and other *Aërides*; *Saccolabium guttatum*, and its finest variety *Holfordi*, the Westonbirt specimen of which had on several occasions from twelve to twenty spikes averaging 3 feet in length; the fine *Vandas*, and the *Renanthera coccinea*, which trailed over part of the roof of one of the houses, and produced its large panicles of crimson flowers freely some forty years ago, have had to give way to the more compact and not less beautiful *Odontoglossums* and other species which were little known in those days. Still, there are remnants of the earlier inmates of the houses which are interesting. Hybrid *Oreobids* and hybridising also recommend themselves to Captain Holford, and there is a good collection of hybrid *Cattleyas*, *Lælio-Cattleyas*, &c., and provision is made for raising them on a moderate scale. Some few are in flower, one of the prettiest being *Sophro-Lælia × læta Orpetiana*, which has rosy-scarlet flowers of a good size, on a neat, dwarf plant. The collection has steadily improved under the care of Mr. Alexander, who now has sole charge of it.

BOOK NOTICE.

IN THE FORESTS OF BORNEO.*

THIS is a very important work of 667 pages, containing many beautiful original illustrations, mostly from photographs, of the flora, fauna, scenery, and the native people of the largest, richest, and most beautiful and interesting of all the Malayan islands. The present book is a popular account of the expedition made by Edoardo Beccari, and is dedicated to his patron, friend, and fellow-traveller, S. Giacomo Dario.

Those who look for a strict record of Beccari's scientific work in Borneo will of course consult the various volumes he published years ago under the title of *Malesia*.

On April 4, 1865, Beccari embarked on the P. & O. steamship *Delhi* on his voyage to Borneo, *via* Ceylon, Pulo Penang, and Singapore. At Ceylon he visited Point de Galle, Colombo, Kandy, and of course the wonderful tropical botanical gardens at Peradeniya. In Ceylon the Cocoa-nut Palms, the Chinese Hibiscus and gorgeous Poinsettias, the exquisitely white and fragrant one-flowered *Pancratium zeylanicum*, and the characteristic *Phoenix pusilla*, the vivid little sunbirds, to say nothing of other birds, the snakes and the ground or jungle-leeches, and the butterflies, were a few only of the things animate that claimed his attention for the first time. Amongst the South American plants naturalised in Ceylon, special mention is made of *Allamanda cathartica*, and the *Lantanas*, that have proved the direst and most luxuriant of weeds in their adopted home.

Beccari was received and welcomed by the hospitable Thwaites, who was then Director of the Botanical Gardens, and the ascent of the mountain *Petrotallagalla* was made by our author under his auspices and kindly assistance. The Orchids of Ceylon seen on this and other journeys were *Dendrobium Macraei*, *D. aureum-pallidum*, *D. Macarthiæ*, *Ipsa speciosa*, *Phaius Wallichii*, and *Calanthe veratrifolia*.

From Ceylon the voyage was continued to Pulo Penang, or Betel-nut Island, or Prince of Wales Island, for it is, or has been, known

by all these names. It is a charming place, an epitome of the eastern tropics, with its whitewashed houses and bungalows, situated amongst rustling Palm-trees and other native vegetation. There is a pretty little waterfall near the landing-place, and on the rocks adjoining it, *Cypripedium barbatum* has been found. Thanks to Dr. Veitch, Mr. C. Curtis, and other residents, the flora of Penang is now well known to Europeans.

From Singapore, Beccari sailed for Borneo by the *Rainbow* for Kutehing—literally "Cat-town," the capital of the extensive territory governed by the present Rajah Brooke.

Chapter III. deals with the Malay population and their supposed origin from Arab immigrants, who intermarried with the Dyak or other Bornean tribes in early times, just as the Chinese did in the north-west at a later period. Thus it must be understood that in Borneo generally the Malays are the ruling class, and occupy the coast towns and river stations all round the island, taking toll, or what we should term Customs dues, of all produce brought down from the interior by the natives. The gold mines and the timber trade are mainly in the hands of the Chinese, who also have depôts along the coast for the purchase (or barter) of wild or jungle produce. This produce consists of timber, Rattan-canes (*Calamus* or *Korthalsia* spp.), camphor (*Dryobalanops*), gutta or rubber, edible birds'-nests, sea-slug (*Holothuria*), pearl-shells, Cocoa-nuts, Betel-nuts, Tobacco, Dammar-gum, and many other things.

Chapter IV., on the fruits, wild and domesticated; the Pinang, or Betel-nut; the red-nosed and other monkeys, the birds, snakes, singing frogs, flying foxes, and other mammals of Sarawak, is very interesting reading indeed.

Among the fruits, the delicious Mangosteen, the Mango, Durian, Orange, Lime, Langsat, Jack-fruit, Banana, Tarippe (Tarap), and many others less well known, are alluded to.

The book is well illustrated from sketches and photographs of the scenery and vegetation; the larger monkeys, such as the *nasalis* and the orang-utan; and the natives themselves, in all their war-paint and other finery. The two photographs on pp. 240 and 241, evidently made from pickled or preserved specimens of the head of the great orang-utan or mias, remind one of the illustrations of the mummied Pharaoh discovered in Egypt a few years ago! Maps or charts are given, showing the routes pursued by the author, and there are figures showing the arts and industries of the people.

There are valuable appendices to the book, treating especially on the climate of Sarawak, the vegetation of the primitive forests, the prevalence of plants having variegated, brightly coloured leaves, or a foliage with a metallic surface or sheen. There are also paragraphs on the parasitic plants, such as *Rafflesia*, *Brugmansia*, &c., and on the size, colour, and fragrance (or odour, let us say) of the forest flora; also on the forest creepers and climbing plants, or Lianes; on narrow-leaved plants of various orders (*piante stenofille*), Palms, Pandanads, Orchids, over 200 species having been seen and collected, including the fly-catching *Bulbophyllum Beccarii*. There are notes on trees that produce flowers directly from their woody trunks or branches, as in *Ficus*, *Artocarpus*, *Durio*, &c.

There are interesting notes on plants hospitable to ants, including *Nepeathes*, *Hydnophytum*, *Myrmecodia*, *Balanophora*, *Clerodendron*, *Korthalsia*, &c. At p. 545 is an account of the different zones or areas of Bornean vegetation. At p. 549, notes on the camphor-

* Beccari: *Nelle Foreste di Borneo: viaggi e ricerche di un Naturalista*. Firenze: Tipografia di Salvatore Landi, 12, Via San' a Caterina. 1902. Price 12 lire.

producing plants of Borneo, mostly different species of the genus *Dryobalanops*, of the order *Dipterocarpaceae*. On p. 554 is an interesting account of the rubber and gutta-producing plants of Sarawak, followed by a systematic list of the economic vegetation most frequently

hairy fruits welded together for the greater part of their length), and *M. campestris*. This is followed by descriptions of some new Bornean and Papuan species of the genus *Artocarpus*, of which unfortunately no figures are given.

time a list of the best books and papers on Bornean exploration might have been given, which would have made this handsome book still more useful and valuable to those, and they are now many, who are interested in "Borneo the Beautiful," and in its rich products of all kinds. *F. W. Burbidge.*

ALNWICK CASTLE GARDENS.

[SUPPLEMENTARY AND OTHER ILLUSTRATION.]

FEW residences are of higher historical interest and more stately in an old-world fashion than Alnwick Castle, the seat of the ducal house of Percy, and though these notes are more concerned with the gardens, I am sure I shall be pardoned if I briefly refer to the Castle and its surroundings, its situation, and the beautiful park and grounds adjacent thereto. I could readily drift into history, and note some of the stirring events of which the Percys had a full share in for fully 800 years, dating from the time the first Percy was knighted by Edward I. at Berwick in 1291, and though at that date I fear there would be few notes concerning the horticultural details of the domain, there are plenty later on. The estate was splendidly cared for, from both the forester's and gardener's point of view, during the last century, as Duke Hugh and Duke Algernon were great planters. The splendid woods in the park testify to this. These woods afford charming effects, the trees being of large size and richly diversified, and when these woods are viewed from the Castle walls stretching away for many miles, with the Brislee Tower in the distance on one side (see fig. 86), and the castles of Warkworth, Bamborough, and Dunstanburgh near the coast in the far distance, and the long stretch of sea and rock-girt coast, the river Aln meandering in various directions, and at one point lapping the hill on which the castle stands, they supply a picture of beauty both tame and rugged rarely to be met with. Bridges span the river and some of the roads, and are always in keeping with the surroundings; the Lion of the Percys' crowning all.

THE DAIRY GROUNDS.

Near to the "dairy grounds," a portion of the gardens at the extreme end of the dressed pleasure grounds, close to the town, and on the banks of the Aln, stand the two Abbeys of Hulne and Alnwick, most interesting objects, and very picturesquely situated; the former in the low portion of the park, and the other a partial ruin on a slight eminence, with miles of hanging woods around and in the far distance on the west with a wide expanse of moorland and plantations.

The area of the park runs into thousands of acres, and is mostly enclosed by a substantial wall. Fallow deer and water fowl of many kinds abound, the latter frequenting the shallow waters of the river close to the walls of the castle, their only enemy being reynard, who is a sad rascal here, and bears a very bad character. The planting during the last fifty years has been carried out with much good taste, and in the vicinity of the river there are numbers of beautiful specimens of Willow, Dogwood, Alder, and Birch, the latter being quite at home in the moist soil. Some very symmetrical Silver Firs of more than 100 feet in height, are seen on the opposite bank of the river, a portion of the grounds to which the public have access. Here are winding walks, and some Oaks, Beech, and Scotch Firs of noble proportions; and some very fine Douglas Fir may be observed in the parks and

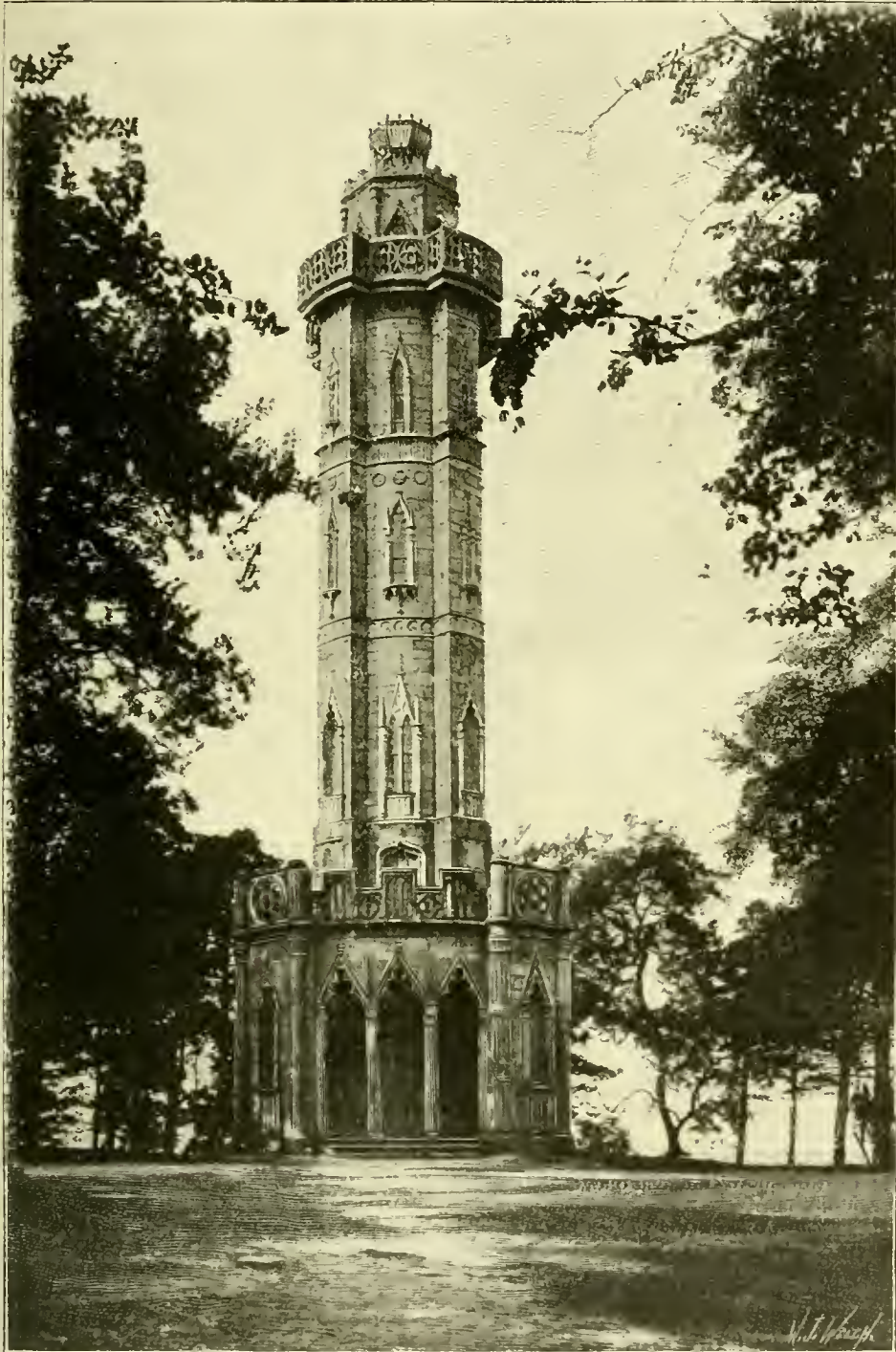


FIG. 86.—BRISLEE TOWER, IN THE PARK, ALNWICK CASTLE.

used in the Sarawak principality, including the wild or forest fruit-bearing trees; notes on the Bamboos, the Rotang or Rattan Palms, and on new species of *Demonorops* and *Calamus*, with full Latin descriptions. At p. 611 is a monograph of the wild or forest species of *Musa* (Banana), with illustrative photographs of the fruits of *M. borneensis*, *M. microcarpa*, *M. hirta* (a curious kind with

The work altogether is handsomely produced, and is a most interesting one from a human, as well as from a merely botanical point of view; and it is published under the auspices of the Italian Geographical Society. The value of the work from a scientific point of view is much enhanced by a copious and accurate index, and by tables of the textual contents, and the numerous illustrations employed. At the same

the "dairy grounds." In the latter is a large collection of flowering trees and shrubs, including Rhododendrons and other peat-loving plants, and these with common evergreen shrubs and trees of the Douglas Fir are a great relief to the eye in the winter months. I saw the grounds this winter after a snow-storm, and really few pictures could be more beautiful. Close under the Castle walls, and for some distance in the parks (see Supplement), are masses of the double and single-flowered Hawthorn, mostly very old trees on single stems, and these trees early in June (they are rarely out in May in this part of the country) afford very pleasing effects, as they flower grandly. Fortunately, there are no flower-beds in the vicinity of the Castle, and this is in keeping with the rugged character of the old fortress; but ample breadths of turf give a charm in a position where flowers would be obviously out of place. Such was, however, not always the case, for many years ago the kitchen and fruit gardens were close to the Castle, only being divided from it by a moat. The latter is now bridged over, and the ground dotted with trees, including a few of the old fruit-trees, left mostly for the sake of their flowering. Near this spot, and enclosed by walls in a portion of the grounds rarely visited, stands one of the finest Laburnum-trees I have ever seen; this tree is commonly visited by arboriculturists who visit Alnwick. The tree is of immense dimensions, covering a great deal of ground; and its free growth, great age, and size, may be owing to its sheltered position. The Laburnum, as usually observed, has seldom so large a spread of branches. *G. Wythes.*

(To be continued.)

The Week's Work.

THE ORCHID HOUSES.

By W. P. BOUND, Gardener to J. COLMAN, Esq., Gatton Park, Reigate.

Epidendrum prismatocarpum.—This beautiful Orchid, plants of which will now be exhibiting their flower-spikes, should be afforded rather more water than has been applied hitherto during the winter, and be placed in a part of the intermediate-house where a large amount of sunshine reaches it during early spring and early autumn, and be at no season densely shaded. Should a repotting be necessary, the most suitable time to do this is soon after flowering, but top-dressing may be carried out forthwith, the roots becoming active as soon as the flower-spikes begin to develop. A suitable mixture consists of equal parts good turfy-peat and sphagnum-moss, and the drainage of the pots should be ample, nothing being more injurious than a water-logged or over-moist compost. When a plant has to be potted, the base should be kept lower than the rim of the pot, and the materials should be placed together firmly. I would on no account advise that this plant be disturbed at the root, unless the compost has got into a very bad state. Water should always be applied with caution, especially after repotting, and the time when most is required is when the young growths are about to develop their new pseudo-bulbs.

Cattleyas with long pseudo-bulbs.—In this section may be put the following species, viz., *C. bicolor*, *C. granulosa*, and the beautiful variety *C. granulosa Schosfieldiana*. The autumn-flowering varieties of *C. guttata* and *C. velutina*, are now about to start into growth, and any required repotting may be performed forthwith; using a compost of good turfy-peat one-half, and one-quarter each of good leaf-mould and clean, chopped sphagnum moss, well mixing the ingredients together and potting firmly, keeping the base of the plant on a level

with the rim of the pot. I prefer to use for this section at the least, the Fern rhizomes found in the peat as drainage material in preference to crocks. Let all of the useless pseudo-bulbs be removed as previously advised, and after repotting let the remaining pseudo-bulbs be neatly secured to sticks, so as to afford steadiness—an operation that is very necessary, otherwise the weight of the pseudo-bulbs will cause the plant to become loose in the compost, and deterioration will soon set in. These *Cattleyas* should be placed in a group altogether in the *Cattleya-house*, and in the sunniest part of it. Until the growths have made good progress, and new roots have seized upon the new compost, water must be sparingly applied; and later when new pseudo-bulbs are forming, water may be applied more freely till flowering is over. One great point to be especially observed in the cultivation of these varieties of *Cattleyas*, is to encourage the growth of roots in the early stages, by keeping the potting material on the dry side and afterwards pushing on the plants more rapidly by applying water freely. I consider these *Cattleyas* very desirable plants, especially from the hybridist's point of view, affording colours and combinations of colours, not commonly found in other genera, and although they have been imported in quantity from time to time, good plants are still rare in gardens; but give a clear atmosphere and not allowing a useless string of pseudo-bulbs to remain to rob the lead, but little difficulty will be experienced in growing this section successfully.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Forced Strawberries.—After these have been hardened off in cold frames, they may be planted in well-manured and deeply dug ground at 2 feet apart, except Royal Sovereign, which should be given 2½ feet. If red-spider infest the leaves, dip them in sulphury water before planting, and make sure that the soil in the pots is moist throughout. Plant firmly, treading the soil round the plants, and afford each plant a depression for holding water. Royal Sovereign, Vicomtesse Héricart du Thury, and a few others will, if well cared for, ripen a fair crop of fruit towards the end of the summer, although such plants are weakened by fruiting twice in a year, and are not very productive the following year. On very light or sandy soils the plants should be mulched; and unless runners are required for increase, they should be removed. We take three crops from our Strawberry-plants ere grubbing them up, and plant several hundreds annually. Established beds should be Dutch-hoed, in order to kill small weeds before putting on the mulch of long litter or clean oat-straw, two weeks previously to the plants coming into flower.

Fruit-blossom.—At Bicton, the promise of the fruit crops is a very good one, and given a fairly mild time from now onwards, we shall have abundant crops. In some districts the severe frost registered on the 13th inst. will have done much harm. The blossoms of the Apple will soon be unfolding their petals, and the larvæ of the lackey-moth (*Bombyx neustria*) should be caught. The eggs are hatched towards the end of April, and the larvæ soon spin a covering in which to shelter themselves. The early morning hours, or damp days, afford the best time to destroy these caterpillars, which so soon devour the young foliage. The webs should be squeezed between the hands, or the insects shaken into a pail containing fresh slaked lime or paraffin emulsion. The trees should be examined once a week for these predators. The Apple-maggot, too, is often to be found early in May, curled up in the leaves or flowers, the latter soon turning brown and withering. Hand-picking is the surest remedy for both of these foes of the fruit-grower. My remarks do not apply to orchard trees, but to bush and espalier trees in the garden. Where the spraying of the trees was

carried out in February, few if any of these insects will be found now, though it is well to make an inspection.

FRUITS UNDER GLASS.

By JAMES WHYTOK, Gardener to the DUKE OF BUCCLEUCH, Dalkeith.

Earliest Fig-house.—The first crop of Figs will now be ripening, demanding that the air should be kept much drier, and less water afforded at the roots—if in pots do not allow them to get over-dry, and stay the usual syringing. The second crop must at the same time be considered, therefore the air must not be permitted to get too dry, or red-spider will attack the foliage to the detriment of the succeeding crop of fruit.

Succession Fig-house.—If the borders are well drained, shallow, and of very limited size, as they should be, considerable quantities of water should be afforded. Apply a dressing of bone-meal or vine-manure, and mulch with short, rich stable-dung, so as to induce surface-rooting. Syringe the leaves morning and afternoon, and maintain a moist atmosphere. Let the shoots be thinned so that crowding is avoided, and pinch the points of the shoots that are retained at the fifth joint. The degree of warmth afforded at night should be 60°, and by day 70° to 75°.

Earliest Vinery.—Grapes now ripening should be afforded more ventilation and less moisture in the air, and the border having been afforded water copiously before the Grapes began to change colour, should require no more till they are cut; the borders being covered with spent Mushroom-bed manure or hay. Let ventilation at the top of the house be applied night and day, the night temperature being kept at 60°. Should red-spider show itself, coat the pipes with lime-wash, having a good handful of flowers-of-sulphur mixed with it, and make the pipes very warm occasionally at night.

The Earliest Muscat Vinery.—The Grapes on the Vines that were started in the month of January, although now of good size, will continue to increase in size for a considerable length of time, and the vinery should be kept moist, with a temperature of 75° on mild nights, and on bright days one of 90°, with sufficient air to prevent scorching of the foliage. If the borders are in good condition, water may be freely applied with safety, and occasionally weak manure-water.

Later Muscats.—If in flower, keep a night temperature of 75°, and one by day of 90° with sunshine, plenty of moisture being distributed about the vinery. These high temperatures, together with abundant moisture in the air, will aid in securing a good set; still, it will be advisable to go over the bunches and distribute the pollen, and varieties that are deficient in pollen may be pollinated with that of others. Stop the shoots at the second bud beyond the bunch, and retain one shoot to each spur. Should Gros Colmar and Muscat of Alexandria be growing together in the same vinery, the leaves should be lightly shaded, more especially the former, by coating the glass on the outside with a liquid shading.

THE FLOWER GARDEN.

By R. DAVIDSON, Gardener to EARL CADOGAN, Culford Hall, Bury St. Edmunds.

Evergreen Shrubs.—The transplanting of Hollies, Yews, Euonymus, &c., should be completed this month, young roots quickly forming at this season. Before filling in the soil entirely, dash water heavily among the roots, then complete the filling in. Water must be frequently applied to transplanted trees until they are established. A mulching of straw or rough stable-litter is also very beneficial, and free use should be made of the syringe or garden-engine on sunny days on all such trees.

General operations.—The staking of the flowers of the various bulbous plants, Hyacinths in particular, will now require attention; the work should be neatly done, and the ties

consist of fine strips of raffia. If the beds or groups can be afforded a light shade during bright sunshine, the flowering period will be considerably prolonged. The blooms of the taller varieties of Tulips may also be secured to neat sticks, and any odd varieties of Tulips which may have got planted accidentally in the beds, &c., should be removed, the vacancies thus caused being filled with plants of similar colours grown in pots. This applies more especially to geometrical beds and where precision and formality predominate.

Clematis are plants of free growth, the tender young shoots of which require to be fastened up twice or more often in a week during the growing season, in order to prevent them getting into a tangle and being injured by wind.

A general weeding of the garden paths may be made at this season, removing every weed and all moss. The grass-verges should be cut anew, put straight, and made of the original width if the deviation has become great. New gravel may be spread, first picking up the old and removing it if very dirty. Make the new coating even and smooth, and apply a heavy roller whilst the gravel is still moist, or if it be dry apply water and roll the next day. When no new gravel is put on a walk, it will suffice to roll the gravel when it is damp but not sticky, and in about six weeks apply a weed-killer, which will have the effect of freeing it from weeds throughout the season.

Nymphaeas.—Most of these plants are commencing to grow, and May is the best month in which to plant them. Any pond with a depth of from 2½ to 3 feet of water suits these plants admirably. They should at the first be planted in shallow boxes with perforated sides, or in wicker-baskets, in size according to that of the plants, making use of a compost consisting of rich loam, cow-manure, peat, and some charcoal well mixed together. The boxes, &c., should be sunk in the lake or pond in the positions in which it is wished they should become established. Those that are grown in tubs or large pots in ornamental basins, may by letting out the water be got at and be fresh potted or re-tubbed when necessary, letting in the water immediately the operations are finished.

THE KITCHEN GARDEN.

By T. TURTON, GR. to J. K. D. WINGFIELD DIGBY, Esq., Sherborne Castle, Dorset.

Beet.—Although early in May is quite soon enough to sow Cheltenham Green Top, and similar strong-growing Beets, such fine stocks as Sutton's Blood Red and Veitch's Selected require a longer season to grow the best-sized roots, and seed should now be sown in drills 15 inches apart, dropping the seeds singly at 2 or 3 inches apart.

French Beans.—A sowing may now be made on a warm border, but I prefer to sow at this date in boxes, placing them in any warm house or pit, with a temperature of about 55°, until the seed has all germinated and the plants are growing freely, when they should be removed to a cold pit or frame, and kept growing sturdily until prospects of favourable weather after the middle of May allow of them being planted out. Afford water freely to succession crops growing under glass, and in bright weather do not spare the syringe. Another sowing should be made in boxes, and brought on in the forcing-house for planting in pits after Potatoes. These will afford a supply in June.

Runner Beans.—A few days may be gained by making a sowing of these forthwith in 6-inch pots. Sow six Beans in a pot, and reduce the plants to four in a pot before planting them out, when hardened, in a trench at 1 foot apart. The ground for Runner Beans cannot be made too rich; therefore, where trenched ground is not available, take out a trench 18 inches wide and 2 feet deep, break up the bottom with the digging-fork, and place on it a good layer of well-rotted dung, and return the soil. Where convenience for raising the earliest crop in pots does not exist, select a sheltered position and sow out-of-doors.

Vegetable-Marrows.—Sow the main crop of these under hand-lights now, where they are to be grown. In the south of England at least it is unnecessary to make elaborate preparations for growing Vegetable-Marrows. My practice is to grow them where the frame Violets have been grown all the winter on spent hot-beds, no further preparation of the beds being necessary after the Violets are cleared off than to level the soil. Place the hand-lights about 6 feet apart, and sow four seeds in each to ensure getting two plants. Pen-y-bryd is very prolific, but I prefer good strains of Long White and Long Green.

Celery.—Prepare well-rotted stable-dung, the greater proportion of which should be drop-pings, for digging into the trenches. To every six wheelbarrow loads of the manure add 14 lb. of agricultural salt. Mix these well together, and put the compost where it may be kept as moist as possible until required for use. Assuming that the ground now occupied with Brussels Sprouts is to be the site of the Celery crop, directly the Brussels Sprout stems are of no further service, pull them up, level the ridges, and clear the land of weeds, &c. Then apply a dressing of air-slaked lime in dry weather, just sufficient to cover the ground evenly all over.

PLANTS UNDER GLASS.

By J. C. TALLACK, Gardener to E. MILLER MUNDY, Esq., Shipley Hall, Derby.

Caladiums.—Plants started in small pots as advised some weeks ago will now be ready for their last re-potting. The compost should consist of turfy loam one-third, and the rest turfy peat, leaf-mould, and sand in equal proportions, together with a sprinkling of small crocks and charcoal. In order to induce vigorous root-action, some pulverised cow-dung should be mixed with the whole. No water should be afforded for several days after shifting the plants. Some light shade may be required for a short time if the weather be sunny. A humid atmosphere and stove temperature should be afforded, closing early, and syringing heavily with soft water.

Coleus.—Repot these plants before they become pot-bound, and place in a light house, affording plenty of warmth and atmospheric moisture. Here the plants will grow rapidly, and acquire brightness of leaf-colouring.

Rhododendrons.—Greenhouse and warm-house Rhododendrons may be potted if they require it; but as these plants can be grown and kept in health for some years without repotting them annually, a top-dressing, if it can be applied, consisting of a mixture of peat, turfy loam, and sand may be applied, first removing some of the inert soil.

Genistas.—The latest flowering batch of Genistas will now be going over, and as the conditions of the ordinary conservatory are unsuitable for any lengthy stay therein, remove them to a light and airy pit, slightly reducing the amount of water afforded at the root, and prune the shoots according to the season when they are wanted in flower. As Genistas are apt to get infested with red-spider whilst resting, the syringe should be freely used, and on mild nights the lights should be removed.

Cacti as a genus are neglected plants, though they have strong claims to the attention of gardeners. Repotting is often neglected, because they do not readily show signs of neglect. The present is the best season for repotting any that made poor growth last year, although if the plants show numerous flower-buds it will be better to wait till the flowering is over. The proper kind of soil consists of loam, broken brick, and mortar-rubble, with a little peat for some of the species. After repotting, very little water will be required for a considerable time; and it is with this idea that some gardeners put them in shady positions for a time. Large shifts do not favour flowering.

Seeds of Primula sinensis should be sown for early flowering, but the chief-sowing should not be made till May. The seed germinates freely in a temperature of from 55° to 60°.

Celosia pyramidalis, Cockscombs, and Balsams. —Seeds may be sown for succession, and early batches of the last two may be repotted, keeping the plants low in the pots, and using a rich soil. Where *Campanula pyramidalis* is grown, it will be found that seeds sown now are more likely to flower next year than those from seeds sown later in the year; and this applies especially to low-lying and cold gardens in which the progress of the young plants is slow.

THE APIARY.

By EXPERT.

BEE-KEEPERS will now find plenty of work to do in the apiary, and everything needful should be done without delay. Have the various articles in good order, and in their proper places, so that you will not have to search for them later on. All stocks should be very carefully examined, and a note taken of the condition of each. A careful bee-keeper will put a number or a letter on his stocks. In examining the hives, choose a nice warm day, or the brood will perchance get chilled on a cold day. I would strongly advise beginners to go to work very carefully, with a "smoker" handy, veil and scraping-knife, and a bird's wing or a small brush; the former preferably, as it is stiff, and the bees are not so likely to attach themselves to it—a goose-wing answers well. In examining the hive, draw back the dummy-board very quietly, so as not to cause any jarring, then withdraw each frame carefully from the back, and take away any frame that is very dirty or weak in itself, as new frames are now so very cheap, viz., one penny each, that it is a pity to have a frame that cannot stand the weight of the comb and honey, which will often weigh from 6 to 7 lb.; the very dirty old combs should be cut out and placed in the receiver for boiling down into wax later on, when convenient. After the frames are removed from the front, scrape the bottom of the hive and the sides, withdrawing the rubbish with the wing or scraper, and replace the frames. In the centre of the brood-chamber, insert a new frame, with a full sheet or two of foundation, if the stock is strong enough to require more space for breeding; also uncap one or two of the frames that contain honey, to enable the bees to breed more rapidly. Wax moths should be destroyed, and a little naphthaline placed in the back of the hive, then replace the quilt, and cover up warmly; and above all, take note of its condition, for if No. 1, say, contains ten frames, the bees strong, and the queen young, so many new frames inserted, looked through on such and such a date, and you may then see at a glance how each stock has advanced when you next go to them. Every weak stock should be fed with syrup, but not rapidly, or the bees will often draw out drone comb. The state of the hive itself should also be noted, and all necessary repairs done to it.

Sections and Crates.—In folding sections, care should be exercised, otherwise a great proportion of them will get broken; they should be turned very carefully, and with clean hands, as the slightest dirty mark will show on them, and to a certain extent take away from the value of the section. Old and dirty sections should not be used in any case, and the sections should be kept as square as possible, or trouble will arise in packing, as the section which is not square will often get its sides broken, and the honey will run over the others and spoil them; and again, dealers will not put up with the trouble of cleaning them, when plenty of clean sections can be obtained elsewhere. The crates should all be scraped, and, if possible, boiled in soda-water to remove any possible chance of disease, great care in this respect often saving the bee-keeper a great deal of trouble and unnecessary expense. Everything should now be got ready for emergencies.

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 MONTH OF MAY.

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| THURSDAY, MAY 1 | —Linnean Society Meeting. |
| SATURDAY, MAY 3 | { Royal Botanic Society's Meet. Société Française d'Hort. de Londres Meeting. German Gardeners' Society, London, Meeting. |
| SUNDAY, MAY 4 | Chambre Syndicale des Hort. Belges, Meeting, at Ghent. |
| TUESDAY, MAY 6 | { Royal Horticultural Society's Committees Meet. Scottish Horticultural Associa- tion's Meeting. |
| WEDNESDAY, MAY 7 | { Royal Caledonian Horticul- tural Society's Show (two days). |
| THURSDAY, MAY 8 | { Royal Gardeners' Orphan Fund, Annual Dinner at the Hotel Cecil. |
| SATURDAY, MAY 17 | { Whitsuntide Exhibition at Old Trafford, Manchester, opens, continuing until 22nd inst. German Gardeners Society, Meeting. |
| MONDAY, MAY 19 | —Whit Monday, Bank Holiday. |
| TUESDAY, MAY 20 | { Royal Horticultural Society's Committees Meet. |
| WEDNESDAY, MAY 21 | { Royal Botanic Society's Meet. General Exhibition of the So- ciété Nationale d'Hort. de France (six days). |
| SATURDAY, MAY 24 | Linnean Society (Anniversary Meeting). |
| TUESDAY, MAY 27 | { Kew Guild Annual General Meeting and Dinner. Bath and West and Southern Counties Society's Show at Plymouth (five days). |
| WEDNESDAY, MAY 28 | { Royal Horticultural Society's Show in the Temple Gardens, Thames Embankment (three days). Annual Dinner of the Gar- deners' Royal Benevolent Institution, at the Hôtel Métropole. |

SALES FOR THE WEEK.

TUESDAY, APRIL 29—
Perennial Plants, Ferns, and General Decorative
Plants, at Pollexfen and Co.'s Rooms.
TUESDAY & WEDNESDAY, APRIL 29 & 30—
Hackbridge Collection of Orchids of the late Dr.
Smea, at 67 & 68, Cheapside, by Protheroe & Morris,
at 12.30.
WEDNESDAY, APRIL 30—
Palms, Ferns, Lilioms, &c., at 67 & 68, Cheapside, by
Protheroe and Morris, at 12.—Palms, Decorative
Plants, Carnations, Perennials, at Stevens' Rooms.
THURSDAY, MAY 1—
Plants at Pollexfen and Co.'s Rooms.—Established
Orchids, by order of the Exors. of Mr. T. Rochford,
at 67 & 68, Cheapside, by Protheroe and Morris, at
12.30.
FRIDAY, MAY 2—
Imported and established Orchids, at 67 & 68,
Cheapside, by Protheroe and 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
—50.7°.

ACTUAL TEMPERATURES:—

LONDON.—April 23 (6 P.M.): Max. 62°; Min. 43°.
Wind, S.W.; weather fine.

PROVINCES.—April 23 (6 P.M.): Max. 56°, Ipswich;
Min. 46°, Aberdeen.

ledge. In the work of re-organisation, the needs of the following classes of students have been studied: 1, medical students; 2, university students in general botany; 3, secondary school classes; 4, polytechnic students; 5, elementary schools. No general rules as to the admittance of students have yet been framed, but it is hoped that this matter will be dealt with at an early date. Excepting a long house in a shady part on the western side of the garden, all the old glasshouses have been removed, and a new range built upon a different site. A small piece of ground on the north side has been sold to the parish authorities for the purpose of widening the road, and all of the new buildings have been erected up to the new line thus formed. These include a fine two-storied building which provides a large laboratory on the ground floor, and a lecture-room over this. Each of these rooms measures forty feet by twenty-six feet, thus giving a superficial floor area of one thousand and forty feet; and allowing five feet for each person, there is accommodation for seating 200 persons. The laboratory is to be used continuously for research work under the direction of Prof. FARMER. There are also several private laboratories, a dark room for micro-photography, an office for the Curator, &c. Adjoining this building is a new dwelling-house for the Curator, Mr. WILLIAM HALES, late of the Royal Gardens, Kew, and of the Birmingham Botanic Gardens. It is likely that the dwelling-house will be ready for habitation in a month's time or less. Beyond the dwelling-house a corridor has been built alongside the wall, and from this open out three span-roofed houses each twenty feet long. All of these are now filled with plants, but some of them will be replaced by others more instructive as time proceeds. Eventually the collection will comprise medicinal, economic, and botanical species, and space will be found only for such as will be of service to the student, or are intended for use in experiments. In addition there are two span-roofed, sunken pits, with pathways in them, and several frames. It will be found when everything is completed that no pains have been spared by Professor FARMER and his committee to obtain efficiency in every detail. The fittings of the laboratories, lecture-room, dwelling-house, and hot-houses, have received very great consideration, and they are the best that could be got for the various purposes. Messrs. FOSTER & PEARSON, who have built the glasshouses, and provided the heating apparatus, may be congratulated on the manner in which they have adapted the houses to the circumstances of the place. The methods of affording ventilation are of the simplest, yet most efficient and easy of application, and the whole of the woodwork being of teak, it may be expected to last a considerable time.

This small, enclosed garden of rather less than four acres looks very beautiful in the summer-time. Its essentially urban character renders the cultivation of evergreens well-nigh impossible, but plants that make their growth during the summer, and then die away to a root-stock, a bulb, or a tuber, succeed well enough.

The Curator has the greatest difficulty in keeping the turf good through the winter, and it is found that new turves from the country depreciate very much more than

grass which has been upon the place some years, from which the more tender species perhaps have gradually died out. The old turf appears to consist chiefly of species of *Festuca*.

The important work of re-stocking the garden with a collection of plants has been helped recently by Messrs. JAS. VEITCH & SONS, of the Royal Exotic Nurseries, Chelsea, who have presented a collection of some 200 hardy flowering shrubs. The Curator would be glad to receive any interesting botanical plants from our readers who may be able to spare specimens.

LINNEAN SOCIETY.—On the occasion of the evening meeting to be held on Thursday, May 1, 1902, at 8 P.M., the following papers will be read:—1. Dr. ELLIOT SMITH, on "The Mammalian *Cerebellum*," with special reference to the Lemurs; 2. Dr. ELLIOT SMITH, on "The Brain of the Elephant Shrew, *Macroscelides proboscideus*"; 3. Dr. R. BROWN, on "The early Condition of the Shoulder Girdle in the Polyprotodont Marsupials, *Dasyurus* and *Perameles*."

THE SURVEYORS' INSTITUTION: ANNUAL DINNER.—Notice is particularly called to the annual Dinner of the Institution, on Wednesday, May 7. The Right Hon. WALTER H. LONG, M.P., President of the Local Government Board; the Right Hon. R. W. HANBURY, M.P., President of the Board of Agriculture; the Right Hon. JESSE COLLINGS, M.P., Earl BEAUCHAMP, the Hon. Mr. Justice WRIGHT, and many other distinguished guests have accepted the Council's invitation, and it is hoped that a large number of members will assemble to meet them. Members' dinner tickets (price £1 1s. each, including wine), and visitors' tickets (price £1 10s. each), to be paid for on application, may be obtained at the Institution.

ROYAL SOCIETY OF HORTICULTURE AND AGRICULTURE OF ANTWERP.—A horticultural exhibition will be held in the Palais des Fêtes of the Royal Zoological Society on Saturday, April 26, from 3 to 6 P.M., and on Sunday, 27th, and Monday, 28th, from 10 A.M. to 6 P.M.

THE LAKE AT BUCKINGHAM PALACE.—The KING, attended by Viscount ESHER, Permanent Secretary of the Office of Works, and Captain HOLFORD, spent some time in the grounds of Buckingham Palace the other day, and inspected the various improvements made there. The ornamental lake in particular has been extensively altered. It was a large basin with a total depth of about 7 feet at the lowest point, and had sides sloping inward at a very sharp angle. As a much shallower depth would be safer, and ample for ornamental purposes, and equally effective for boating, about 3 feet of the banks have been razed off, and the surrounding lawns treated in proportion. The fountain in the centre has been removed. The lake is supplied by gravitation from the Serpentine. The grounds surrounding the lake have also undergone changes, some old and palpably dangerous Elms having been removed, and young trees planted in their places.

SPRING FLOWERS AT BELVOIR CASTLE GARDENS.—We hear from His Grace's gardener, Mr. DIVERS, that the flowers in the Duke of Rutland's gardens at Belvoir are opening quickly, and will be at their best from April 28 to May 12. The collection has been much improved and extended during the last six years. The flower-gardens are open to the public free daily; orders for admission are

The Chelsea
Physic Garden.

THOSE of our readers who are familiar with the interesting history of the physic-garden at Chelsea, and of the important educational work that was formerly carried out in connection with its management, will be glad to know that the renovations foreshadowed in these pages on August 25, 1900, p. 150, are now nearing completion. It is most gratifying to know that the old garden will shortly become once again a centre for the diffusion of botanical know-

not required. Mr. DIVERS is always pleased to meet any visitors who may be interested in spring gardening.

SPRING-FLOWERING MAGNOLIAS.—If destitute of the splendid foliage and delicious perfume of the evergreen species, the deciduous kinds, by the profusion of their beautiful flowers, make ample amends. We have before us, from Messrs. J. VEITCH & SONS, a box containing specimens of various hardy species on which a few words may be acceptable. Taking the specimens as they come, the first we notice is—

M. STELLATA, also known as **HALLEANA**.—A species with snow-white flowers about 3 inches across, with numerous rather thin linear or linear-oblong flat petals, slightly recurving, and all of about equal length. This is of Japanese origin. A variety with the petals lightly tinged with rosy-lilac is the var. *rosea*. The flowers are somewhat smaller than those of the type, but the lovely rosy flush compensates for any loss of size. The anthers are pale. The species is a native of Japan.

M. CONSPICUA, or **M. YULAN**, has snow-white flowers nearly 3 inches long, with broad, oblong, obovate, or spoon-shaped, snow-white, thick petals; the outer or lowermost being shorter than the inner ones. The anthers are pale red. It is a native of Japan and China.

M. SPECIOSA NOVA is one of the *conspicua* group, and has turbinate flowers about 3 inches long, with thick, broad, oblong, obtuse, erect petals, white flushed with lilac.

M. ALBA SUPERBA is another of the *conspicua* group, with top-shaped flowers 3 inches long, with broad, obovate, white petals, slightly flushed with lilac at the base.

M. SOULANGEANA is a hybrid between *M. obovata* and *M. conspicua*. The flowers are over 3 inches long, top-shaped, the lower petals shorter than the upper; oblong, obovate, spoon-shaped, very thick; white, flushed with deep lilac at the base and along the nerves. The anthers are reddish.

M. SOULANGEANA NIGRA.—Flowers nearly 5 inches long, deep rosy-purple; petals oblong, obovate, concave, coloured on both surfaces, paler on the inner side; anthers and stigmas dark coloured. A form remarkable for its intensely dark purple or crimson flowers. The petals are longer, rather more acutely pointed, more tapering at the base, and of thinner texture than in the type.

M. ALEXANDRINA is evidently a form of *Soulangeana*, but the petals are more deeply tinted with rosy-lilac.

M. RUSTICA FL. RUBRO has almost globular flowers 4 inches long, with very broad, obovate, almost orbicular, hooded petals of thick substance, and deep rosy-lilac colour on the outer surface; white, within the anthers are rosy.

M. LENNÉ has flowers nearly 4 inches long, top-shaped, with nearly equal petals broadly obovate, hooded, deeply rosy-lilac outside, white within; anthers purplish. This is also a seedling from *Soulangeana*.

Since the above notes were written, we have received flowers of *M. Lenné*, *M. Alexandrina*, *M. conspicua*, and *M. stellata*; also of *Spiraea Thunbergi*, from the nurseries of Messrs. THOS. CRIPPS & SON, Tunbridge Wells.

FRUIT AND JAMS.—Now that food stuffs are being attended to by the Chancellor of the Exchequer, it is interesting to note how many subjects one special tax may bring within its malevolent influence. Take as instance the impost known as the Sugar Tax—it lays hold of fruit, such as peel, candied and strained, orange marmalade, fruit jams, fruit jellies, coconut confectionery, and crystallised fruit; canned and bottled fruits, fruit pulp, Tamarinds, preserved ginger, &c. The same may be noted in regard to grain and flour; flour enters into the composition of a long series of manufactured articles in daily use.

EUGÈNE VERDIER.—The death of this famous rosarian at the age of 75, is announced.

THE "HURST AND SON" MUSICAL SOCIETY'S SMOKING CONCERT.—We are requested to state that this event will take place at the London Tavern, Fenchurch Street, E.C., on Wednesday, the 30th inst., EDWARD SHERWOOD, Esq., in the Chair. A varied programme has

been arranged. Tickets 1s. each, may be obtained from the Hon. Sec. (F. WASHINGTON), 152, Houndsditch, London, E.

THAMES BANK IRON COMPANY.—This firm entertained its staff and employes at dinner on Saturday last, at Anderton's Hotel, Fleet Street, to celebrate the admission of Mr. ALFRED J. BAKER as a partner in the business.

CHRYSANthemUM PICTURES.—We have received from Mr. W. J. GODFREY, of the Exmouth Nurseries, Devonshire, a sheet 30 inches long and 20 inches wide, bearing coloured representations of four of the Exmouth seedlings shown for the first time during last season. These are Masterpiece, Exmouth Crimson, Sensation, and Godfrey's Pride. The smallest flower measures 8 inches by 9 inches, and the largest, that of Godfrey's Pride, 9½ inches by 10 inches. From specimens of the varieties noticed by ourselves at the exhibitions in November last, we have every reason to accept the pictures as representing the exact size of the flowers portrayed. In the colours also, the reproductions very closely approach the natural, so that it would be impossible to get a better idea of what these novelties are like than is afforded. Mr. GODFREY has experienced unusually good fortune recently in the raising of seedlings, and seldom indeed can a cultivator hope to secure such a number of first class novelties as were shown from Exmouth last season. The very showy sheet now before us will mark this extra good fortune, and it will also be of permanent value, as showing in future years some of the best Japanese Chrysanthemums in 1902. The illustrations are the work of Messrs. BLAKE & MACKENZIE, Liverpool.

A COMBINED SHOW IN EDINBURGH.—There is to be held in Edinburgh, on July 16 next, a large exhibition of Roses, Carnations, Sweet Peas, flowers of hardy perennial plants, fruits, and vegetables, under the combined management of the Royal Caledonian Horticultural Society and the Scottish Horticultural Association. Since 1889, when the Royal Caledonian Horticultural Society discontinued its series of summer shows, there has been no attempt made to hold a large exhibition earlier than September, though small ones have taken place for several years under the auspices of the Scottish Horticultural Association. Now that these two powerful societies have agreed to unite their forces to secure a larger display in the present year, success may be confidently predicted. The show will be held in the Music Hall, George Street, and entries should be made, not later than July 12, to the Secretary of either Society.

PEACH-TOMATO.—This is the subject of a coloured illustration and description by Prof. RODIGAS in the March number of the *Bulletin d'Arboriculture*, &c. The fruit is of medium size; the skin resembles that of a Peach; the form is globular, slightly furrowed, the colour reddish; the flavour is agreeable, and the cropping qualities satisfactory.

HYBRID PHLOXES.—M. CHARLES PYNABERT brings to remembrance the fact that the Duke of BRABANT and the Count of FLANDERS raised various hybrid Phloxes at Laeken, and one of these, *Phlox Drummondii* var. *Leopoldi*, was figured in PAXTON'S *Magazine of Botany*, in 1818.

PUBLICATIONS RECEIVED.—*Bibby's Quarterly*, Spring Number. An illustrated journal of country and home life, full of information on agricultural topics, and abundantly illustrated in black and white and in colours.—*The Tropical Agriculturist*, March, includes papers on: Tea-growing in Ceylon, Camphor, &c.; reports of the meetings of various

companies, and notes and extracts concerning Coffee, Rubber, Oranges, Tobacco, Cacao, and similar crops. —*The Journal of Agriculture of Victoria*, February. Contents: Field Experiments for 1901, Treatment of Vintage by Diffusion, P. Andrieu; American Vines and Hints for the Vintage, R. Dubois; The Orchard, C. B. Luffman; Vegetable Garden and Hardy Fruit Garden, C. B. Luffman, &c.—*Journal of the Department of Agriculture of Western Australia*, February. Among the contents are articles on: Scale on Oranges and Lemons, *Lotus australis* as a Poison-plant, Acetylene Gas-lamps for Trapping Insects, &c.—*The Canadian Horticulturist*, March. Contents: The Cranberry Pippin, Spraying, Forming the Tree-top, Fertility of Orchards, Strawberries for Exhibition, Greenhouse and Window Gardening, and Gooseberry Cultivation.—*Cultures Spéciales: Plantes vivaces de Pleine Terre et Plantes de Serres* (Catalogue). F. Gerbeaux, 1, Rue de Ruisseau, Nancy, France.

HOME CORRESPONDENCE.

THE HALL.—Will you allow me through the medium of your journal to express the great satisfaction I feel at the successful launch of the Vincent Square scheme? It is a central and easily accessible spot, and will, I am convinced, prove a prime solution of a long-cherished problem. As a member of the R.H.S., I believe I only echo the opinion of most Fellows if I add that the scheme reflects credit on all concerned, and not the least on the "country parson," whose skilful steering has so largely contributed to the Society's success. The Vincent Square scheme is but the result of long years of patient effort, and not a few of those years were, let us not forget it, years of discouragement. I hope, therefore, that amid the plaudits which are heard on every hand, we shall not forget how much is due to the "man at the wheel." But some will say—"What about that £25,000? I think it ought to be an article of faith with us all not to touch a farthing of the reserve-fund. I believe there will be no difficulty whatever in raising the money. Our show at the Palace this year ought to be a "crowning" one, if, as I venture to predict, the whole sum will be subscribed by the time that comes round. May I suggest that the names of our 6000 Fellows be sorted out under their various localities, and this geographical analysis be issued with as little delay as possible to each centre—not large centres, the smaller the better; take a town or village, and include all the Fellows within a mile or so, that is to say, within easy distance, and get one to act as local secretary, and engineer the subscription list. This will organise the Fellows, and for the objects of the organisation, I hope they will prove "jolly good Fellows." There are some noblemen and gentlemen round here, and it is the same in other places, who do not belong to the Society, and one especially with a grand old garden whose head gardener, an intelligent Scotchman, laments his master not belonging to the R.H.S., so as to procure him a look at our excellent journal. This gardener has four sufficient (young) reasons for not subscribing the guinea himself. Ought not gardeners of subscribers to be admissible at a half-guinea? T. D. E.

DUAL PERFUME IN FLOWERS.—Different odours in varieties of the same species have often been remarked by me, and occasionally marked differences in the odour of the flowers of the same plant, such as is remarked on in the *Gardeners' Chronicle*, at p. 262 of last issue, and also previously. But the most marked instance about which I have not the slightest doubt, occurred in the case of one of the earliest examples of *Odontoglossum hebraicum* Rehb. f., which I flowered, which passed into the collection of Sir Trevor Lawrence, Bart., and was, I believe, illustrated in the *Gardeners' Chronicle*. When its flowers expanded, I tested it for odour, expecting to find the strong Hawthorn scent of the section to which it belongs. I found it to be Cinnamon-scented, and found the same odour when tested again by myself and by others. When the plant went to Sir Trevor Lawrence's, I advised the late Mr. Spyers, his Orchid grower, of its strange odour, and he

promised to report on it when next it flowered. It flowered again, and Mr. Spyers told me that its odour was of Hawthorn. It flowered once more, and the scent was said to be that of Hawthorn, the same as the then better known *O. × Andersonianum*, under which *O. × hebraicum* is now included. But, on its flowering the third time in the Burford collection, Mr. Spyers, mindful of its supposed eccentricity, tested it again, and found it to have a distinct Cinnamon odour, and in order to make sure got the opinion of others. I remember his report well: "You were quite right about the hebraicum this time, it smells like Cinnamon and nothing else!" How it behaved afterwards I do not know. *James O'Brien.*

LILIUM GIGANTEUM.—At the time I was an apprentice at Innes House gardens, about five miles from Elgin in Morayshire, there was a fancy bee-hive, having a southern exposure, and in front of this a bed containing three large clumps of *Lilium giganteum*, which flowered strongly and abundantly each of the four years I remained at the place. The soil was rather poor and sandy. In winter the Lilies were covered about 6 inches deep with spent hot-bed manure. At the beginning of April this manure was dug into the soil around the Lilies, and formed the only nourishment afforded them. Since that time I have been unsuccessful in my attempts to cultivate this noble Lily at a place near Dundee, and in Northumberland. *W. J. Simpson, The Grange Gardens, Sutton.*

CARNATION BEAUTÉ INCONSTANTE.—In connection with the discussion on winter-flowering Carnations, a variety called *Beauté Inconstante* may be mentioned, which possesses so many good qualities along with very attractive colouring, that those gardeners who have to provide a constant supply of bloom might do worse than add it to their collections. It is really a yellow-ground, but the yellow is generally so little apparent that the effect of the bloom is rosy-crimson, varying in tint according to whether the flower opens in mid-winter or later, when there is more light. The plant is floriferous, and the blooms are of medium size, perfect in form, with a good calyx. *R. P. Brotherston, Tynningham.* [A flower kindly sent by our correspondent is of a lively tint such as he describes; petals long, spatulate, and not numerous. *Ed.*]

ASH AND LARCH ON THE CHALK.—Would Mr. J. Simpson specify a few places on the high-lying chalk downs of Wiltshire where Ash and Larch of luxuriant growth can be seen. "Not far from Tisbury," is rather vague, as, unless the geological survey maps are wrong, Tisbury is two or three miles from the chalk. I have been living on the edge of the Wiltshire downs for the last ten years, and cannot remember seeing either of these trees growing rapidly after the first ten or fifteen years on typical down land. That they grow well on the chalk is well known, but to produce a luxuriant growth different conditions to those prevailing on the high-lying, wind-swept downs must be present. These conditions may often exist in the valleys and on the lower slopes of the hills, but although such localities are on the chalk, they cannot be termed "high-lying chalk downs" any more than the black-hearted Ash they produce can be termed "best." *A. C. Forbes.*

GLOXINIAS.—If your correspondent, G. H. Westlake, will turn to p. 205, he will find he has made a mistake in attributing the article on Gloxinias to me. I had not read the article until I saw Mr. Westlake's remarks; but on reference to what has been written, I must say that I fully endorse Mr. Hopkins' opinion with regard to growing Gloxinias under cool treatment. I have had some experience in growing these showy flowering plants, and I know that they make luxuriant growth and flower well under the treatment suggested by Mr. Westlake. But take them out of the house for decorations or for exhibition, and they will be found of no use whatever; while those grown under cool treatment, though not making such rapid growth, will with good

treatment flower equally well, and the flowers and foliage will be of good substance, and will last well even in a cool conservatory or for house decoration. I have seen plants which have been grown on under cool treatment continue to flower when taken indoors for house decoration, while those grown in heat vanish in a few days. Gloxinias do not like a cold, draughty position, or an excessively dry atmosphere, but they may be grown successfully under much cooler conditions than are generally advocated, and if this fact was better understood they would be more appreciated, and many who are afraid to attempt their culture would succeed. The main points being careful attention to watering, moist surroundings, full exposure to light, and plenty of air, without exposure to direct draught, a rich compost, and a liberal supply of liquid manure as soon as the pots are filled with roots. *A. Hemsley.*

CASSIA CORYMBOSA AT TREGYE, CORNWALL.—The noble appearance and fine pictorial effect of this flowering shrub, as shown by the illustration in the *Gardeners' Chronicle* for April 12, go to show how well this Cassia, as a wall-plant, succeeds in Cornwall when well cared for. At the end of August last year I had, through the kindness of the Hon. John Boscawen, the opportunity of visiting Tregye, and seeing the fine specimen figured; and although it may have been a little past its best at that date, it still formed a beautiful object, almost every branch being wreathed with its yellow-coloured flowers, and the plant the pink of health. I incline to the belief that the border in which the plant is growing consists chiefly of turfy loam of medium texture, but whether there had been any preparation of the soil previous to planting I am unable to say. It would be interesting to learn from Mr. Boscawen his method of treatment with reference to pruning, and the kind of soil; also if any protection is afforded the plant in severe weather, and the severest frosts that have been registered at Tregye without injury to the plant. On the same site, *Plumbago capensis* and *Asparagus tenuissimus* were in a satisfactory condition. *H. Markham.*

TOMATO DISEASE.—In a recent issue of *Gardeners' Chronicle*, Mr. Miles said he grows 200 plants in the open air and keeps the soil dryish in order to combat the disease; also that dryness at the roots is not injurious to the plants. But how is it possible for the blossom to set when the plants are dry at the roots? My experience shows that disease will attack the plants sooner under glass than outside. I believe the chief causes of the disease are as follows: (1), growing the plants in soil which has carried Tomatos before; (2), over-crowding the plants; (3), dampness in the air and insufficient ventilation; (4), excessive use of animal manures. I have grown hundreds of plants and have never lost one from disease. I always use good, mellow, turfy loam, and mix a little cow-manure with it, and stack the whole for nearly twelve months. I quite agree with Mr. Miles that it is a good plan to mix burnt refuse with the soil, and it is necessary to have the soil near to the light. I use soot-water two or three times a week when the fruits are set, besides cow and stable-manure water, and have had splendid crops. *Thos. Hicks, The Gardens, The Beeches, Spondon, Derby.*

THE SHREWSBURY GRAPE PRIZES.—In your last two issues there have been communications on the Shrewsbury grape prizes, one from the champion grape-growers of the south, and one from the champion of the north—Mr. Goodaere and Mr. Kirk respectively. This competition will certainly be of an international character, creating the keenest rivalry between England and Scotland; and it is to be hoped that it will be as great a success as it deserves to be. Mr. Kirk points out or suggests to the donors of the book given as a 2nd prize that if the winner is already in possession of this work, money in lieu thereof, and equal in value, should be substituted for it. This is but a reasonable suggestion, and one to which

the donors will doubtless give their consideration. Mr. Goodaere's reference to this is a new one to me. While I was an undergardener I had much to do with grape-showing and prize-taking for many years, but never had the good fortune to serve a master so considerate and liberal as Mr. Goodaere, who gives the prizes he has no need of to his under gardeners. I am surprised that such a veteran prize-taker as Mr. Goodaere should lose heart already, and begin to apologise for the Cup going again to Scotland. For my part I am not so certain that the 1st prize will cross the border this time; at all events, it will be soon enough to make excuses after and not before that event takes place. The competitors either in England or Scotland who will be enabled to enter for the prizes will not be affected in the least degree by either the London "season" or the Scottish grouse season—twelve bunches only being required. Seeing that this competition will be judged by points, I think that a discussion on some common principles which ought to govern the judging of Grapes by points would be of interest and practical use. *D. B.*

THOROUGHLY HARDY BAMBOOS.—All of the Bamboos here have withstood the winter very well. *Phyllostachys illeonoris*, *P. Boryana*, *P. Quiloi*, *P. rugosa*, and *P. viridi-glaucescens* are quite uninjured, and some of these plants are exposed to easterly winds. The same may be said of *Arundinaria japonica*. These are specially to be recommended for their hardiness and for the way in which they retain the green colour of the foliage throughout the winter. *P. aurea* is unhurt where sheltered, but the foliage is browned where exposed to cold winds. This, I am told, happens even in its native country. When planting Bamboos, the provision of shelter from north and easterly winds is of great importance, the foliage will often withstand sharp frost unscathed in the absence of wind, when it will not if both are experienced at the same time. *J. G., Batsford Gardens.*

NARCISSUS TELAMONIUS.—The double-flowering form of this plant is common enough in many old-fashioned gardens, and of late years has received some attention from the market growers and others, having proved valuable for early forcing; but the single variety is in my opinion far superior, although for some reason it has not found favour with the growers and salesmen. I found a quantity of it growing here mixed with the double form in 1894, and was told it had been brought in 1886 from an old cottage garden where it had been much neglected. I had them lifted in 1895, and a dozen plants of the single form were planted by themselves. For a year or two they gave nothing but single flowers; they have now increased largely, and this season bear 164 flowers, five of which have come double, there are therefore 164 flowering bulbs now, besides a quantity of small ones, which is a good increase in six years, as they have only been transplanted once during that time. The first flowers opened here this season on March 22, while *N. princeps* growing close by did not open until March 29; it is altogether a better plant than *N. princeps*, being much more floriferous, of a better colour, and wider in the chalice, which is also much reflexed. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

A HEAVY TOMATO FRUIT.

IN fig. 87, p. 279, we have reproduced a photograph kindly sent us by a correspondent at Bristol, of a Tomato fruit weighing 1 lb. 10 oz. It was grown in Mr. Burgess' Tomato-house at Knowle, and three other fruits obtained from the same plant, together weighed 4 lb. 6 oz. Our correspondent has omitted to furnish us with the name of the variety, but it will be seen that the fruit has a tolerably even form. Last season Mr. Burgess' total crop was more than two tons and a half. Such mammoth fruits as that illustrated, would be of very little use for the supply of the market, for the purchaser who requires, say 1½ lb. of Tomatos, expects to get at least, some whole fruits!

SOCIETIES.

ROYAL HORTICULTURAL.

APRIL 22.—There was another crowded meeting at the Drill Hall, Buckingham Gate, Westminster, on Tuesday last.

The NATIONAL AURICULA and PRIMULA SOCIETY'S Show necessitated the use of two of the three long central tables, and a large amount of space was occupied by the numerous and splendid exhibits of Narcissus, including those shown for the award of a Silver Cup offered by Messrs. BARR AND SONS. This was won well by the Hon. Mrs. BERKELEY, Warley, Essex. Seldom have Narcissus been better shown, and it will be seen below that the Committee recommended awards to a considerable number of novelties.

Orchids were interesting and good, and the ORCHID

Horticultural Society should only be concerned with new plants, flowers, and fruits submitted for Certificates. There is not the necessary convenience for groups on such occasions, so long as the present Drill Hall has to be used.

Floral Committee.

Present: W. Marshall, Esq., Chairman; and Messrs. Chas. T. Druery, Geo. Nicholson, C. W. Knowles, J. F. McLeod, E. Molyneux, Jas. Hudson, John Jennings, W. Howe, Chas. Jeffries, J. A. Nix, C. Dixon, W. Bain, R. C. Notcutt, R. W. Wallace, F. Page-Roberts, J. W. Barr, Geo. Gordon, C. J. Salter, Herbert J. Cutbush, H. J. Jones, W. Cuthbertson, J. H. Fitt, W. P. Thomson, E. H. Jenkins, M. J. James, Chas. E. Shea, C. Blick, Harry Turner, E. T. Cook, J. Fraser, and Ed. Mawley.

A group of Anthuriums from Sir TREVOR LAWRENCE, Bart., Burford, Dorking, was a magnificent exhibit. There were very fine plants of varieties of A. Scherzeri.

plants of Tree Pæonies, perpetual-flowering Carnations, &c. A red or scarlet Carnation named Winter Beauty was blooming freely, and the same plants have yielded flowers since the commencement of October last. Messrs. CUTBUSH also exhibited some finely-grown Ericas, including E. persoluta alba, E. hybrida, E. erecta, E. Cavendishi, E. candidissima, and E. ventricosa magnifica; and a plant of Boronia heterophylla, very freely flowered.

Messrs. Wm. PAUL & SON, Waltham Cross Nurseries, Herts, had a very gay group of forced shrubs. These included a fine new Deutzia, D. hybrida Lemoinei, very much superior to D. gracilis; Cydonia japonica, C. Maulei grandiflora perfecta; Lilacs, including the fine double white variety Madame Lemoine, the purple Charles X., and others; Viburnums, Wistarias, Rhododendrons, &c., and a few Roses.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, Chelsea, exhibited their pretty variety of Cineraria

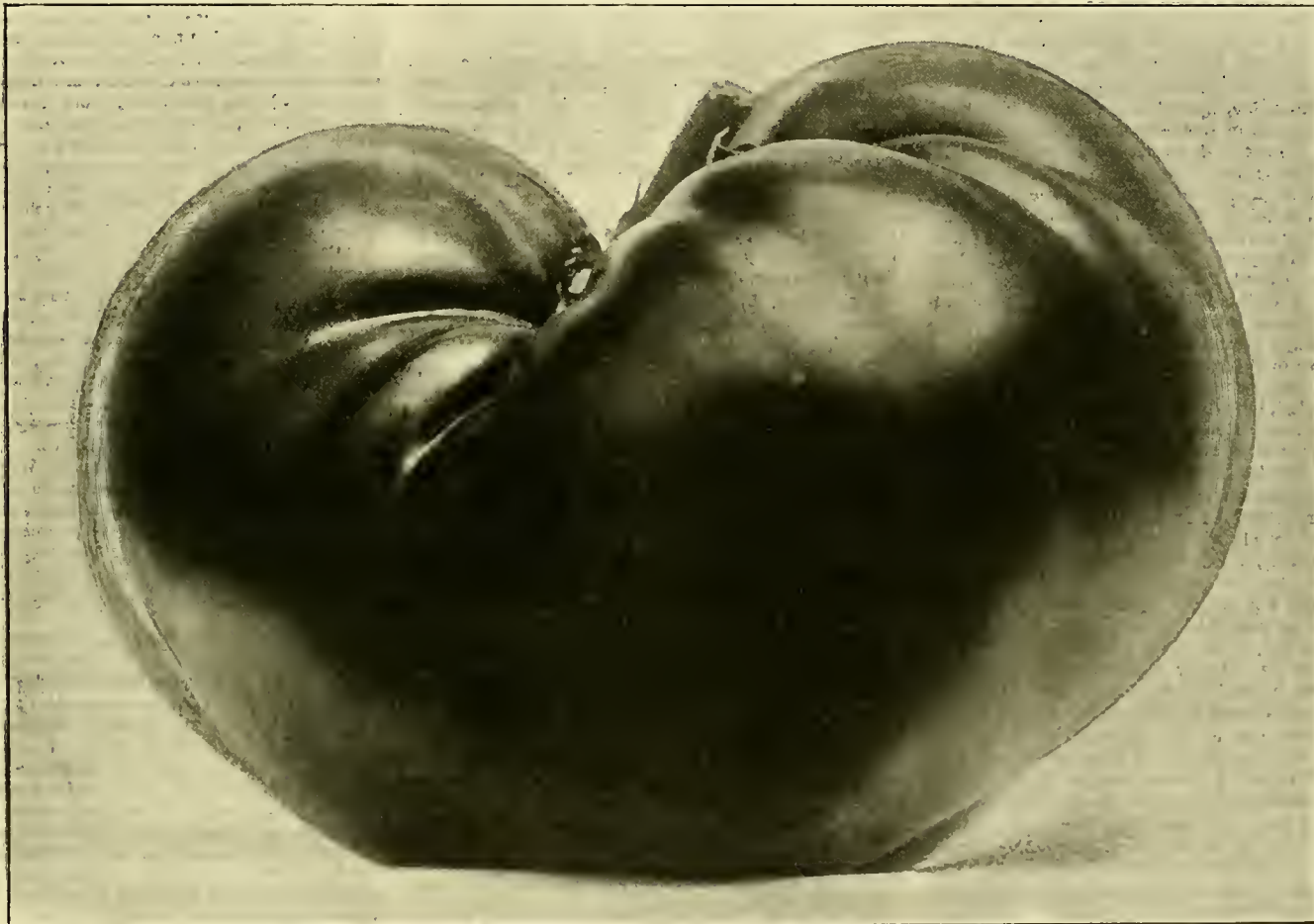


FIG. 87.—TOMATO GROWN AT KNOWLE FOR MR. S. BURGESS: WEIGHT 1 LB. 10 OZS. (SEE P. 278.)

COMMITTEE recommended awards including one First-class Certificate and seven Awards of Merit.

The FLORAL COMMITTEE was concerned chiefly with such plants as Hippeastrums, Ferns, Cordylines, Cinerarias, Roses, forced shrubs, hardy flowering plants, &c. Sir TREVOR LAWRENCE, Bart., staged a most interesting exhibit of seedling varieties of Anthuriums. Altogether there were seven Awards of Merit recommended by this Committee. Auriculas were before two bodies, one variety gaining a First-class Certificate from the NATIONAL AURICULA and PRIMULA SOCIETY, and another variety an Award of Merit from the FLORAL COMMITTEE of the Royal Horticultural Society.

The FRUIT AND VEGETABLE COMMITTEE had very little to do.

In the afternoon there were fifty new Fellows elected to the Society, and a very interesting Lecture upon Campanulas was read by MR. PRITCHARD of Christchurch.

The crush was so unpleasant on Tuesday, that it would be desirable that when a special Society is invited to hold its exhibition in conjunction with one of the ordinary meetings, the Committees of the Royal

anum, some of them with fifteen or more spathes upon them. One of the very best of these is A. S. elegans, of the Rothschildianum section, having a fine spathe equally mottled with scarlet and white; maximum, Wardi, latifolia, triumphans, a very large flesh-coloured spathe of unusual length; Parisienne, of same colour, but of neater form and smaller size; and Burfordiense, were some of the best shown. Burfordiense is wholly red-coloured, of deeper tint than others. There were many seedlings also, as yet unnamed, but of very great beauty. The A. Andreanum section was illustrated by cut spathes and foliage of several handsome varieties. Among these were sanguineum, Lawrencei, pure white; Marie, pure white, with pale red spadices; Dr. Lawrence, large, pink-coloured; Perfection, very bright scarlet, &c. Some very choice hardy Rhododendrons in trusses included R. Aucklandia hybrida, with large, pale-tinted flowers; R. x Luscombe's hybrid, rose coloured; R. campylocarpum, yellow, &c.; Camellia Mathotiana, of deep red colour, measured nearly 8 inches across.

Messrs. W. CUTBUSH & SON, Highgate Nurseries, London, N., exhibited a small group containing forced

stellata named Feltham Beauty; also a group of forced plants of their fine double flowered Cherry known as Cerasus pseudo-Cerasus "James H. Veitch." The flowers are nearly 2 inches across, and when forced are of a delicate pink colour.

Messrs. J. CARTER & Co., High Holborn, London, showed a striking group of Cinerarias, arranged upon the floor of the hall near the door, and together with other exhibits, making ingress to the hall a difficult matter, only one person being able to pass at a time. The Cinerarias were very fine indeed, the flowers having great size, and a variety of brilliant colours. The strain represented is a capital one.

Messrs. HUGH LOW & Co., Bush Hill Park Nurseries, Enfield, again exhibited a group of their pretty Schizanthus Wisetonensis.

Mr. H. B. MAY, Dyson's Road Nursery, Upper Edmon-ton, had a few choice Ferns, consisting of Pteris Alex-andre, a good variegated crested variety, P. Childsli, a very elegant light coloured Pteris, with abundant fimbriation. Polypodium glaucum cristatum and P. Mayi, the beautiful Polypode with large glaucous fimbriated fronds, fig. in a Supplement to Gard. Chron., May 28, 1898.

Messrs. GEO. JACKMAN & SON, Woking, exhibited a nice lot of hardy Primulas, including varieties of *P. Sieboldi*, also *P. viscosa*, *P. venusta*, *P. longiflora*, *P. farinosa*, *P. rosea*, *P. denticulata*, &c., also Auriculas, Tulips, Primroses, and other hardy flowering plants. A new Clematis was shown named King Edward VII., with flowers 8 inches across, of purple colour.

Messrs. THOMAS S. WARE, LTD., Hale Farm Nurseries, Feltham, exhibited varieties of *Primula Sieboldi*, also *Ramondia Natalie*, and other hardy flowering plants.

Messrs. R. & G. CUTHBERT, of the Southgate Nurseries, Middlesex, showed a group upon the floor, extending from the entrance door to the wall at the side, very gay with brilliant coloured Azaleas of the indica, Ghent, and mollis species, also hybrids of the latter and *A. sinensis*. There were likewise many white and lilac-flowered Wisterias as standards from 4½ to 8 feet high, well furnished with flower racemes; and Lilac President Grévy, of a very pale tint, trusses large and abundantly produced. The back of the group consisted of Palms, Grevilleas, and Japanese Maples. The blaze of colour would have been the better, we thought, for more green foliage, consisting as it did practically of flowers only.

Messrs. BARR & SONS, King Street, Covent Garden, showed extensively Narcissus of all classes, Darwin (i.e., non-broken) Tulips, and a few alpinas.

Mr. S. MORTIMER, Rowledge Nurseries, Farnham, exhibited a group of freely-flowered strains of Polyanthus and Primroses in a variety of colours.

Messrs. HOGG & ROBERTSON, 22, Mary Street, Dublin, exhibited a large number of single-flowered Tulips, grown on Irish soil, large in size and bright in colour. Especially fine were *Chrysolora*, a bright yellow; *Gris de Lin*, reminding one of *Magnolia purpurea* in colour and shape; *Grand Duke of Russia*, flamed rose; *Epaminondas*, feathered scarlet; *Hector*, a fancy, of a shade of crimson edged with yellow; *Mars*, a deep crimson Tulip; *Brunhilda*, cream-coloured, with a yellow nerve to the segments; *Eleanor*, purple edged with white. The same exhibitors staged a large collection of Narcissi, including *Trumpet*, *Leedsii*, *poeticus*, *bicolor*, *cernuus*, *albus plenus*, *incomparabilis*, *Burbridgei*, and *albicans* varieties in large numbers, and shown in a very fresh condition.

Messrs. H. CANNELL & SONS, Swanley, Kent, showed zonal Pelargoniums as cut blooms, set up as compact pot-ies in glasses. These beautifully coloured flowers have been often shown in larger quantities and greater varieties, but seldom in finer condition. Of striking tints and smooth regular form of pip were Lord Roberts, purplish crimson; Mr. T. E. Green, scarlet; Chaucer, cerise-pink, a very large pip; Lady E. Malet, white, slightly suffused with pink, and having a wire edge of the same tint; Sir J. Llewellyn, crimson; and Princess of Wales, bright pink.

Messrs. WALLACE & CO., Kilnfield Gardens, Colchester, exhibited a nice lot of hardy plants in flower, among which were *Anemone fulgens bicolor*, *Tulipa saxatilis*, *Narcissus*, *Fritillarias*, *Iris*, *Triteilias*, &c.

Mr. AMOS PERRY, Hardy Plant Farm, Winchmore Hill, had a group of hardy plants, in which some very beautiful varieties of *Iris pumila* were prominent; also *Primula rosea* and *denticulata*, *Geum Heldreichii lutea*, *Saxifraga Wallaei*, &c.

A magnificent specimen pot-plant of *Rhododendron Nuttallii*, 8 or 9 feet high, was shown by Lady TATE, Park Hill, Streatham (gr., Mr. W. Rowe). It is an old, well-known species, with pale yellow flowers.

Messrs. W. BALCHIN & SONS, Hassocks Nursery, Sussex, exhibited a group of hard-wooded plants, in the cultivation of which they are so exceptionally successful. These consisted of the new *Erica propendens*, *Tetratheca ericoides*, *Diosma capitata*, *Aphelexis marcantha*, *humilis*, and *Barnesii*.

Mr. E. POTTEN, Camden Nursery, Cranbrook, Kent, exhibited *Forsythia Fortunei*, an excellent double-flowered Peach named *Clara Meyer*, *Berberis Hookeri*, and varieties of *Cupressus Lawsoniana*.

Messrs. FRANK CANT & CO., Braiswick Nurseries, Colchester, exhibited a grand lot of cut Roses, which included a large number of well-known exhibition varieties. Particular interest, however, was centred in some capital blooms of the new Tea variety *Lady Roberts*, a sport or seedling from *Anna Olivier*. It has splendid form, great substance, very wide petals, and is of a rich apricot tint.

Mr. GEORGE MOUNT, Canterbury, exhibited a grand and beautiful collection of cut Roses, many of them with long stems and luxuriant foliage. Particularly noticeable were such varieties as *Caroline Testout*, *Catherine Mermet*, *Niphetos*, Mrs. Jno. Laing, Captain Hayward, &c.

Messrs. PAUL & SON, The Old Nurseries, Cheshunt, exhibited Roses in pots, mostly consisting of well-known and valued varieties of Teas and Hybrid Teas. We observed the white *T. Elise Fugier*, *H.T. Antoine Rivoire*, a grand flower; *T. Madame de Watteville*, *T. Madame Falcot*, *T. Innocente Pirola*, *T. Queen of Sweden* and *Norway*, a lovely flower, full and globular, with the tints of *Souvenir de la Malmaison*. It appears to make a good pot Rose; the new seedling *Tea Rambler*, semi-double, of a bright pink tint, and buds of a red tint; and a basketful of plants of *Seecolililacina*, a flower having rays of a bright purple tint, and a flower-stalk 2 feet high. The foliage is deeply crenated and dwarf.

AWARDS.

Border Auricula Alexandra.—A very fine alpine or border Auricula, with large yellow flowers, in many-flowered trusses. From the Misses HOPKINS, Mere Cottage Gardeos, Knutsford, Cheshire (Award of Merit).

Cordylone Mayi.—A pretty variety, with green leaves 2 inches wide, margined with red. The young leaves are wholly red in colour. The variety is a very suitable one for cultivating in small pots, even in 3-inch pots, as it colours directly the plant has established itself. From Mr. H. B. MAY (Award of Merit).

Dimorphanthus Mandschuricus foliis argenteis marginatis.—A prettily variegated form of this handsome Aralia-like plant, the variegation being particularly around the margin of the leaf. The bi-pinnate leaves of the type are sometimes more than 4 feet in length. From Mr. JNO. RUSSELL, Richmond Nursery, Surrey (Award of Merit).

Hippeastrum General Buller.—A rather short, widely expanded flower, with exceedingly wide petals, some of them 4 inches across. Colour bright orange-scarlet, with a little green in the centre (Award of Merit).

Hippeastrum Mrs. Bilney.—One of the white and scarlet variegated section, of good form and substance (Award of Merit).

Hippeastrum Queen Alexandra.—A large flower, with thick segments. Colour scarlet, variegated a little with white, greenish in the centre (Award of Merit). All from Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, Chelsea.

Pteris Wimsetti multiceps.—This is a very decorative variety of the well-known *Wimsetti Pteris*. The fronds have fine crests, and are prettily cut. From Messrs. J. HILL & SON, Barrowfield Nurseries, Lower Edmonton (Award of Merit).

Medals awarded.

Gold Medal to Sir Trevor Lawrence, for Anthuriums. Silver-gilt Flora Medal to Messrs. R. & G. Cuthbert, for forced shrubs.

Silver-gilt Banksian Medals to Mr. G. Mount, for Roses; to Mr. Frank Cant, also for Roses.

Silver Flora Medals to Messrs. J. Carter & Co., for Cinerarias; to Mr. Mortimer, for Polyanthus; and to Mr. A. Perry, for hardy flowers.

Silver Banksian Medals to Messrs. W. Cntbush & Son, for flowering plants; to Messrs. Wallace & Co., for hardy plants; to Messrs. Balchin & Sons, for hard-wooded plants; and to Messrs. H. Cannell & Sons, for zonal Pelargoniums.

Bronze Flora Medal to Messrs. Paul & Sons, Cheshunt, for Roses.

Bronze Banksian Medals to Messrs. H. Low & Co., for *Schizanthus Wisetonensis*; to T. S. Ware, Ltd., for hardy flowers; to G. Jackman & Son, for hardy flowers.

Cultural Commendation to Messrs. Balchin & Sons, for hard-wooded plants.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the Chair); and Messrs. Jas. O'Brien (Hon. Sec.), J. G. Fowler, J. W. Potter, H. M. Pollett, H. Ballantine, N. C. Cookson, E. Ashworth, F. W. Ashton, J. Cypher, W. A. Bilney, F. J. Thorne, W. H. Young, J. W. Odell, W. Boxall, J. Douglas, E. Hill, and H. Little.

One of the finest shows of Orchids of the season graced the meeting, and considerable difficulty was found in making room for the plants.

H. T. PITT, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood), was awarded a Silver Flora Medal for an excellent group, embracing a fine and varied selection of *Odontoglossum crispum* and hybrids, the best being the beautifully spotted *O. crispum Annie*, the large pale yellow and brown *O. x Wilekeanum Rosslyn* variety, the beautiful and distinct *O. x Adriane Fairieanum*, the bright chestnut and yellow *O. Hunnewellianum* "Rosslyn variety," and the spotted *O. crispum Stamfordianum*. We remarked in the group plants of the singular *Cirrhopetalum appendicu-*

latum, *Zygopetalum Wallisii*, some very fine *Cattleya Schroderae*, *Cypripedium Mastersianum*, *C. x Sir George Llewellyn*, &c.

Messrs. JAS. VEITCH & SONS received a Silver Flora Medal for a fine group consisting chiefly of hybrid Orchids, among which was the very singular bigeneric *Lepto-Laelia x Veitchii* (*Leptotes bicolor x Laelia cinnabarina*). *Leptotes bicolor* being now referred to *Tetramora*, probably *Tetra-Laelia* would be the better name. The leaves retained the fleshy character of *L. bicolor*, but they were more channelled; the inflorescence was more elongated than in *L. bicolor*, but the chief characters of the flower were retained, the colour being changed to a rosy-salmon tint. Showy features in the group were made by a selection of ten varieties of the orange and purple *Laelia x Latona*, and a similar number of the more rose-coloured *L.-C. x Highburyensis*, *L.-C. x Ascania*, *L.-C. x Zephyra*, *L.-C. x Iberia*, *Laelia x Digbyano-purpurata*, *Chysis x Sedeni*, good varieties of *Cattleya Mendeli*, and *C. Schroderae*; *C. Lawrenceana*, *Dendrobium x Cheltenhamense*, and a very clear white *Cattleya intermedia alba*.

Messrs. SANDER & SONS, St. Albans, were awarded a Silver Flora Medal for an excellent group, in which the back row consisted of fine specimens of the showy *Dendrobium thysiflorum*, each with several spikes. In the centre was the massive *Cypripedium x Emperor of India* (see Awards), and noteworthy were *Lycaste Skinneri*, *Ture Mellström*, a perfectly formed variety, with broad white sepals tinged with rose, the petals being bright purplish rose with clear white tips, which arranged well with the pure white lip and column; *Lycaste Skinneri* "Richard Hinde," a pretty flower, with pale rose-pink sepals, dark carmine-rose petals, and white lip; *Cattleya Skinneri alba*, of the best type; *Eulophiella Elisabethae*, with two spikes; *Cypripedium Chapmani superba*, *Miltonia vexillaria* "Empress Augusta," with large rich rose-purple-coloured flowers; a singular and pretty *Odontoglossum x loochristyense*, and a remarkable variety of *O. triumphans*, with whitish flowers, heavily blotched with sepia-brown, and with greenish-yellow tips, showing indications of hybridity; and other good *Odontoglossums*, the large white forms of *O. crispum* being specially effective.

W. A. BILNEY, Esq., Fir Grange, Weybridge (gr., Mr. Whitlock), showed an extensive collection of very finely cultivated and profusely flowered *Dendrobiums*, in which *D. nobile nobiliss*, *D. n. Amesiae*, and other good forms of *D. nobile*, *D. Wardianum*, and many and excellent forms of *D. x Aiosworthi*, were well shown, also *Cattleya Lawrenceana* and *Sophranitis grandiflora* (Silver Flora Medal).

Mr. J. CYPHER, Cheltenham, was awarded a Silver Flora Medal for a group of well-grown showy species including the now scarce *Cattleya Lawrenceana* of the best type, and its still more beautiful hybrid, *Laelio-Cattleya x Ilyeana*. In the group the more remarkable plants were the natural hybrid *Vanda x Charlesworthi*, with a fine spike of purplish-rose flowers; *Cypripedium x Vipani*, white with purple markings; *C. x grande atratum*, *C. x Harrisianum superbum*, *Vanda teres*, *Odontoglossum crispum* varieties and hybrids; *Ada aurantiaca*, *Epiphronitis x Veitchii*, a panful of the pretty rose-coloured *Pinguicula caudata*, *Dendrobium nobile virginale*, a good white var.; *D. x Cybele giganteum*, &c.

JEREMIAH COLMAN, Esq., Gattou Park (gr., Mr. W. P. Bound), staged a group in which were several excellent examples of showy Orchids, including *Oncidium monachicum*, *Vanda tricolor planilabris*, and specially good *Odontoglossum Halli*, *O. luteo-purpureum*, and *O. x Andersonianum*.

Messrs. HUGH LOW & CO., Bnsh Hill Park, were awarded a Silver Banksian Medal for a group containing two excellent *Odontoglossum x Adriane*, *O. x A. Low's variety*, and *O. x A. aureum*, the latter having a bright yellow ground, and both finely spotted; *O. Halli*, *O. Pescatorei*, and other *Odontoglossums*; *Laelia x Latona*, *Dendrobium x Nestor*, *Cypripedium Curtisii*, *Oncidium Marshallianum*, *Cattleyas*, &c.

Baron Sir H. SCHRODER, The Dell, Egham (gr., Mr. H. Ballantine), showed spikes of several fine *Odontoglossums*, among which were the fine *O. x Adriane Memoria Victoriae Reginae*, which received a First-class Certificate at the last meeting.

NORMAN C. COOKSON, Esq., Oakwood, Wylam (gr., Mr. H. J. Chapman), showed *Odontoglossum x Adriane* "Oakwood variety," with white flowers spotted with brown, and approaching *O. crispum* in size and shape; *O. crispum Doris*, a pretty spotted form; and the fine *O. x Rolfe Oakwood variety* (see Awards).

M. CHAS. MARON, Brunoy, France, sent *Laelio-Cattleya x Mrs. J. Leemann* (*L. Digbyana x C. Dowiana aurea*), a very pretty novelty with pale primrose-coloured

flowers, the backs of the sepals and petals tinged with rose, and the margins of the petals similarly coloured. The centre of the lip was of a greenish tint with purple markings, the front primrose, tinged with lilac. He also sent *Cattleya* × *Adonis* "Maron's variety" (*Mossia* × *Warscewiczii*), like a fine *C. Mossia*, with a broader lip; and *L.-C.* × *Digbyano-Mendeli*.

W. J. COWPER, Esq., Valebridge, Hayward's Heath (gr., Mr. Reynolds), showed a group of well-flowered *Dendrobium atro-violaceum*.

ELIJAH ASHWORTH, Esq., Harefield Hall, Wilmslow (gr., Mr. Holbrook), showed a spike of *Cypripedium candatum* *Ashworthianum*, a fine *C. caudatum*, with some of the characters of *C. e. Wallisii*, a spike of which was also shown for comparison.

Sir R. G. HARVEY, Langley Park, Slough (gr., Mr. A. Gillies), showed a fine specimen of *Cattleya Lawrenceana*, with many flowers.

Messrs. LINDEN & Co., Brussels, staged a group of fine *Dendrobium nobile* varieties, and *Odontoglossums*, including *Odontoglossum* × *Galbium*, a singular supposed natural hybrid between *O. odoratum* and *O. Hunnewellianum*, and with showily spotted flowers; *O. triumphans* "Hyperion," a finely shaped and richly marked form; *O. crispum gratiosum*, with broad, petalled white flowers, spotted with red-brown; and *O. loochristyensis* "Coronation," distinct and showy.

The Honble. WALTER ROTHSCHILD, Tring Park, Tring, showed a fine variety of *Eulophiella Elisabethæ*, with white flowers, tinged with purple at the back, and having a yellow crest to the lip. The plant had been grown from a small imported plant in indifferent condition, and now bore a very stout spike.

Awards.

FIRST-CLASS CERTIFICATE.

Odontoglossum crispum "Robert McVittie," from W. THOMPSON, Esq., Walton Grange, Stone (gr., Mr. Stevens).—A remarkably fine variety of the *O. c. apiatum* class, with well-formed flowers very heavily blotched with dark reddish-purple.

AWARDS OF MERIT.

Odontoglossum × *Rolfæ* "Oakwood variety," from NORMAN C. COOKSON, Esq., Oakwood, Wylam (gr., Mr. H. J. Chapman).—A very fine form of the showy hybrid between *O. Pescatorei* and *O. Harryanum*. Sepals and petals creamy-white, marked with broad dark purple blotches. Lip broad and flat, crest yellow surrounded by small purple spots; the front a pure white.

Cypripedium × *Emperor of India*, from Messrs. SANDER & SONS, St. Albans.—A noble variety of unrecorded parentage, but in which *C. Lawrenceanum*, or one of its hybrids, has doubtless played a part. Dorsal sepal almost circular, flat, and showing the rich colouring as in *C. c. crenatum* superbum, 3 inches across, white suffused with rose nearly to the margin, and bearing dark purple lines. Petals extending over 5 inches, spotted with chocolate-purple on the inner halves, and tinged with rose on the outer portions; face of lip shaded with rose. Foliage handsome, pale green with dark green reticulation, and transverse markings.

Cypripedium × *Vipari*, *Hessle variety*, from W. P. BURKINSHAW, Esq., Hessle, Hull (gr., Mr. Barker).—A large and finely formed variety of the hybrid, between *C. niveum* and *C. philippinense*. Petals and dorsal sepal pure white with purple-dotted lines; lip clear white.

Odontoglossum × *Adriane Fairieanum*, from H. T. FITT, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood).—Totally different to any of the numerous forms previously shown, the flower being large, and well formed, the ground-colour white, and the markings of purplish-brown, mostly displayed in large, irregular bars extending across the segments. The plant was finely grown, and carried a very handsome flower-spike.

Cypripedium × *Edithæ* (*C. bellatulum* × *C. Chamberlainianum*).—Flower of the same form as most other *C. bellatulum* hybrids. Upper sepal greenish-white, nearly covered with purple lines and colouring. Petals greenish, heavily marked with purple. Lip cream-white, tinged and spotted with rose, after the manner of *C. Chamberlainianum*.

Cattleya × *Niobe* (*Aelandæ* × *Mendeli*), from Messrs. JAS. VEITCH & SONS.—A singular dwarf hybrid, with large wax-like flowers. Sepals and petals tinged with rose, and sparsely spotted with purple, lower half of the lip white, and front lobe dark rose.

Dendrobium × *Ainsworthi* "Hazelbourne variety," from W. A. BILNEY, Esq., Fir Grange, Weybridge (gr., Mr. Whitlock).—A large pure white variety, with dark purple disc to the lip. The plant was very profusely flowered.

Narcissus Committee.

Present: H. B. May, Esq., in the chair; with Miss E. Willmott, and Messrs. C. MacMichael, Rev. S. Eugene Bowne, J. T. Bennett-Poë, R. Sydenham, F. W. Burbidge, Geo. Reuthe, J. W. Pope, W. Poupard, P. R. Barr, W. H. de Graaff, J. D. Pearson, W. F. M. Copeland, Walter T. Ware, Jas. Walker, A. Kingsmill, and the Hon Secretary.

In respect to the Daffodil, this meeting may be accepted as the great exhibition of the flower for the season, and certainly the great mass of material and the almost endless exhibits justify our observation.

Among many representative groups that from Mr. H. J. Jones, Lewisham, in addition to a choice collection of all the best things, contained many novelties. Of these the *Glory of Noordijk* stood bold and telling: it is a bicolor of great size; Golden Frill was another with a quite novel and frilled cup of an uniform yellow tint. Mrs. H. J. Jones is a bicolor in the way of Victoria and Queen Wilhelmina, of the soft-tinted bicolor class, and of great size.

Messrs. VEITCH & SONS likewise contributed a fine group in which all the best varieties in commerce were displayed to advantage. Great masses of Sir Watkin, of Empress, of the Leedsii group, the lovely poetarum, Mrs. Walter Ware, and others of the general set; of new varieties we noted Sunflower, a fine self; and Samson, a neat flower; with Waveren's Giant, an enormous flower, with a crown of great depth and breadth.

A small collection came from C. S. A. NIX, Esq., Tilgate, Crawley (gr., Mr. G. Heal), in which were many nice clean flowers well arranged.

Then we came to that most elaborate group from Messrs. BARR & SONS, the one title of whose collection it would be impossible to name. In the centre, however, were set some of the gems of this fine lot; and we name Apricot, Maggie May, a charming thing; Lucifer, with its brilliant cup of orange; the new self white Ajax Peter Barr, Lady Audrey, also white; while among choice and new bicolors are Californian, Lucin Christina, Weardale Perfection, and Monarch, being some of the best of the Ajax varieties: of Poeticus varieties Cassandra and Glory were among the better ones, and certainly very striking.

Another representative lot came from Messrs. HOGG & ROBERTSON, Rush, Dublin, and here we noted Lady Arnot and Flamingo of the incomparabilis, Lady Margaret Boscaewen, a bicolor Sir Watkin, Mrs. H. D. Betteridge, White Ajax, and Countess Mayo, also of the same sort; Countess Cadogan, Brigadier, and White Lady, were others of the best kinds in this group.

Mr. R. H. BATH, Ltd., Wisbech, also showed a large group, in which all the cream of this extensive group was seen. Here the Duke of Bedford, very bold; Madame de Graaff, Michael Foster, Weardale Perfection, and many others were noted.

Messrs. B. S. WILLIAMS also set up a choice assortment of the best varieties in large blocks.

Quite a choice lot of varieties came from the Hon. Mrs. BERKELEY, Great Warley, Essex, who was also the winner of the 1st prize for the Cup offered by Messrs. Barr. Some of the most notable here were White Queen, J. B. M. Camm, Weardale Perfection, Lucifer, C. J. Backhouse, Rev. Wolley Dod, Golden Bell, a fine rich self; and Lady Margaret Boscaewen, were among the cream of a number of very fine varieties. They were set up in a bed of moss. There is little doubt this is the finest group ever set up for the Silver Cup.

[AWARDS OF MERIT.]

Narcissus incomparabilis Primrose Phoenix.—A fine double flower of full primrose-yellow tone. From Mr. J. WALKER, Thame, Oxon.

N. Queen Christina.—This is a giant bicolor of the Victoria type, yet larger, clearer in cup, and finer whiter segments; in short, a noble flower of fine proportion. From Messrs. BARR & SONS.

N. Duke of Wellington.—This is nothing less than Monarch done in gold, and a grand flower withal, of great stature. Shown by J. P. KENDALL, Esq., Newton Poppleford, Ottery St. Mary.

N. Queen Emma.—Another sterling bicolor, with handsome crown or trumpet, and the rather thin perianth segments of Horsfieldi. From Messrs. VEITCH & SONS, Chelsea.

N. Cresset.—A finely-formed flower of the purest white, as though the outcome of the finest Poeticus, mingled with a rich orange-cupped kind as Gloria Mundi of the incomparabilis section. There are pale and deep orange tints as seen in the crown.

N. Belle Berkeley.—Almost a bicolor Queen of Spain, with a soft lemon cup and white perianth.

N. Warley Magna.—A very pure and chaste white Ajax, the broad cup well expanded, and prettily frilled. A very fine flower.

N. Incognita.—A flower of the Cresset class, with a quite self uniform clear orange crown; the segments are long, and nearly obovate in outline. This is quite an acquisition. The four varieties described above were shown by Miss WILLMOTT, Warley, Essex.

N. Glory of Noordijk.—A giant member of the bicolor group, in which the crown is of great size and width. The perianth is also of large size, and possibly, when seen in quite a fresh state will give entire satisfaction. It is very refined in the crown, which has a large expanding rim. Shown on behalf of Messrs. J. DE GROOT & SON, Haarlem, by Mr. ROBERT SYDENHAM, Birmingham.

MEDALS AWARDED.

Silver Banksian Medal to Mr. H. J. JONES, Lewisham; to Messrs. B. S. WILLIAMS, Upper Holloway; and to Messrs. J. VEITCH & SONS, Chelsea.

Silver-gilt Flora, to Messrs. R. H. BATH, Ltd., Wisbech; and to Messrs. BARR & SONS.

Silver Flora, to Messrs. HOGG & ROBERTSON, Dublin.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq., chairman; and Messrs. A. H. Pearson, Geo. Wythes, James H. Veitch, G. Norman, F. Q. Lane, James Smith, P. C. M. Veitch, J. Jaques, W. Fyfe, C. G. A. NIX, H. Markham, Ed. Beckett, Alex. Dean, S. Mortimer, W. Bates, Geo. T. Miles, Jos. Cheal, G. Reynolds, and J. Willard.

Mr. JNO. RUSSELL, Richmond Nurseries, Surrey, exhibited some remarkable heads of the new Seakale, Solid Ivory. It is recommended as a better growing variety than Lily White: the growths were nearly 4 inches through them, and very much larger than the roots, from which they were forced (Cultural Commendation).

A Vote of Thanks was offered to Miss EDMONDS, Wiscombe Park, Devon, who showed fruits of Adams' Pearmain Apple.

Some fine early Duke of Albany Peas came from R. W. HUDSON, Esq., Banstead, Great Marlow (gr., Mr. Gibson), and a Silver Banksian Medal was awarded.

Lecture on Campanulas.

At 3 P.M. a lecture on "Campanulas," was delivered by Mr. MAURICE PRITCHARD, of the Nurseries, Christchurch, Hampshire, who, as the chairman (Rev. W. WILKS) remarked, probably knows as much of Campanulas, from the cultivator's point of view, as anyone.

Mr. PRITCHARD commenced by saying that most of the species were first-rate perennial flowering plants; very few, as *C. media*, were biennials; a few are annuals, and several need the protection afforded by a greenhouse. The plants generally will succeed pretty easily, and the particular nature of the soil has apparently little influence upon their well-doing. Most of the species produce splendid flowers for use in a cut state, but they are very fragile, and little suited for sending long distances, as the blooms quickly wither when laid upon each other in packing. In height the species vary from 7 feet to 2 inches. Soil and local conditions affect the height to which they may grow, an instance being *C. latifolia macrantha*, which reaches to 3 feet only at Christchurch, but in the northern counties to 6 feet.

Mr. Pritchard wished particularly to emphasise the fact that some of the dwarf-growing species are good "wall plants." They are essentially good plants for cultivation in niches of a wall, and some would succeed there that are exceedingly difficult of cultivation elsewhere. Propagation is effected by division in spring, or by seeds, or by cuttings, which should be taken in May. In a very few instances, propagation may be effected by root-cuttings. The small-growing Campanulas must never be disturbed when resting, either for division or merely for transplantation. This is the cause of failure in numerous cases. Spring is the best time, when growth is commencing, or even summer, rather than when they are resting.

There are few new Campanulas, said Mr. Pritchard; but latterly a few hybrids have been raised, and he hoped that some one would set to work in this matter. It would be much appreciated, for instance, if the pink colour at present obtainable in the Canterbury Bells (*C. media*) could be conveyed to some of the perennial species.

Mr. Pritchard then enumerated most of the species and varieties, saying something of interest about each of them, and clearing the ground as to the correct appellations of some that are frequently misnamed.

Subsequently, Mr. E. JENKINS recommended *C. persicifolia* and *C. nobiliter* damp positions in a retentive, rather heavy loam.

National Auricula and Primula.

A VERY fine exhibition of Auriculas was the general opinion of experts who witnessed the display in the Drill Hall on Tuesday last. The show and alpine varieties were numerous, and the quality was finer on the whole than was apparent last year, though here and there stale blossoms met the eye. That Auricula culture is increasing in this country, there can be no doubt; varieties are more enquired for than before, because the number of growers has increased in the south and north alike, and in the midlands, and especially round Birmingham, Auricula Societies are springing up.

All of the competitive classes for show and alpine Auriculas, were well filled. It has long been the usage at Auricula exhibitions that one truss only of a show Auricula shall be shown on a plant, and this results in blooms of very fine quality. At the committee's and judges' luncheon at the Hotel Windsor, over which Mr. J. Pope, of Birmingham, presided, Mr. J. W. Bentley, of Manchester, urged that at the London exhibition only one truss of bloom should be permitted on the alpine varieties, and this was generally concurred in. The judges did not fail to notice that in the case of some of the alpinos, some of the pips were somewhat faded, which detracted from the quality of the trusses. As an exhibitor, it was Mr. Douglas's day, for he was present in strong force with show and alpine varieties, and carried off the leading prizes. His newer alpinos, such as Duke of York, Firefly, Urania, Ziska, and others, were seen to great advantage.

Show Auriculas.—There were four collections of twelve varieties, Mr. J. DOUGLAS, Bookham, Surrey, taking the 1st prize with finely grown and well-bloomed plants of green edges, Abraham Barker, Shirley Hibberd, and Chloe, the latter a bright-edged new variety of B. Simonite's raising, not yet put into commerce; grey edges, George Lightbody, Richard Headley, and George Rudd; white edges, Vesta (new), Acme, and Mrs. Dodwell; and selfs, Mrs. Potts, Raven, and Ruby, both raised by the veteran Ben Simonite. Mr. W. SMITH, Bishop's Stortford, who tries hard every year to take the 1st prize, was 2nd with green edges, Abraham Barker, and Abbé Liszt; grey edges, George Lightbody, and Rachel; white edges, Acme, Elaine (a very chaste new variety), and Lady Randolph Churchill; selfs, Miss Barnett, and Gerald. Mr. CHAS. TURNER, Royal Nurseries, Slough, was 3rd.

With six varieties, Mr. J. DOUGLAS was 1st of ten competitors. He had of green edges, Abraham Barker and Chloe; grey edges, George Lightbody and Rachel; white edges, Venus; and self, Ruby. Mr. J. SARGENT, Cobham, was 2nd; he had, differing from the foregoing, Abbé Liszt and Rev. F. D. Horner, green edges; and Acme, white edge. Mr. W. SMITH was 3rd.

There were seven collections of four varieties, Mr. J. SARGENT taking the 1st prize with green edge, Abbé Liszt; grey edge, Geo. Lightbody; white edge, Acme; and self, Miss Barnett. Messrs. PHILLIPS & TAYLOR, florists, Bracknell, were 2nd; they had a fine plant of green edge, Mrs. Henwood; and also F. D. Horner, differing from the foregoing. Mr. J. W. EUSTON, The Gardens, Great Gearies, was 3rd.

There were eight exhibitors of two varieties, Mr. J. W. BENTLEY, Stokehill, Manchester, coming in 1st with white edge Beauty, and self Gerald; Mr. J. CLEMENTS, Birmingham, was 2nd, staging grey edge Rachel, and self John Spaulding; Mr. A. S. HAMPTON, Reading, was 3rd.

Then came the single specimens in their several sections, a good number of which were staged. Green edges: Messrs. PHILLIPS & TAYLOR were 1st with Shirley Hibberd, and 3rd with Mrs. Henwood; Mr. J. SARGENT was 2nd with Abbé Liszt; and Mr. J. BENNETT-POE 4th, with Mrs. Henwood. Grey edges: Mr. POE was 1st, and Mr. R. STAWARD 2nd, with George Lightbody; Mr. J. SARGENT was 3rd, with Rachel; and Messrs. PHILLIPS & TAYLOR 4th, with George Rudd. White edges: the five leading prizes were won by the variety, Acme; Mr. SARGENT was 1st, Mr. J. PARSONS 2nd, and Mr. C. TURNER 3rd. In the self class, Mrs. Potts, the finest blue self, took all the leading prizes. Mr. J. SARGENT was 1st, Mr. C. TURNER 2nd, and Mr. BENTLEY 3rd.

The class for fifty Auriculas is still maintained, but now that the competition is so general in the smaller classes, the money given here for what may be regarded as plants from which the best have been selected, might surely be better employed in creating smaller new classes. Mr. JAMES DOUGLAS certainly took the 1st prize with a collection of better quality than we are accustomed to see in this class; the inclusion of a few bright alpinos would have increased the effective appearance of the whole. Of green edges,

Mr. DOUGLAS had Dr. Hardy, F. D. Horner, Greenfinch, Abbé Liszt, and Mrs. Henwood; grey edges, Perseverance, a promising new variety; George Rudd, Colonel Champneys, and Mabel; white edges, Elaine, an attractive new variety; Conservative, and Heather Bell; selfs, Cleopatra, Ruby, Mrs. Potts, and Buttercup; Mr. PURNELL-PURNELL was, we believe, placed 2nd, but the recording of the 2nd award was unfortunately overlooked.

There was a class for six green-edged Auriculas, not fewer than three varieties, and not more than two of one variety. Here Mr. DOUGLAS was again 1st, having Shirley Hibberd, F. D. Horner, James Hannaford, and Abbé Liszt. Mr. W. BEALE came 2nd: he had John Garrett, an old bright edged variety; Abraham Barker, James Hannaford, and F. D. Horner; Mr. C. TURNER was 3rd.

In the maiden class for four show varieties, Mr. J. CLEMENTS was placed 1st, with very creditable specimens.

The Premier Show Auricula selected from the whole exhibition was Mrs. Henwood, exhibited by Messrs. PHILLIPS & TAYLOR.

Seedling Show Auriculas.—Some were staged, but with the exception of two green edges shown by Mr. DOUGLAS, no further prizes were awarded. These were Lincoln Green, a highly promising flower, well proportioned, and having a dense black body colour and excellent edge; and Triumph, a bold green edge, also of a promising character. Of the other new edged flowers, Wild Swan, a chaste white edge in the way of Acme, appeared to be the most promising.

Alpine Auriculas.—These made a brilliant display, being numerous shown, and as most of the plants carried two or three trusses, the mass of bloom was quite striking. There were some glorious golden centres, of which Duke of York stands as a distinguished representative, but the chaste white centres showed a somewhat lamentable weakness. The section needs greater encouragement.

In the class for twelve varieties, Mr. DOUGLAS had, of gold centres, Ziska, Duke of York, Firefly, and Urania, a brilliant quartette; J. F. Kew, The Bride, soft salmon, flushed with fire at the base of the segments—a charming variety; Dean Hole, Hiawatha, Mrs. Markham, and Rosy Morn; white centres: Ivanhoe, and Thetis. Mr. J. W. EUSTON, Great Gearies, who upholds the reputation for the cultivation of Auriculas made in this district by Mr. Douglas, came 2nd; his most striking flowers were Duke of York, The Bride, Urania, Julia Lodge, Rosy Morn, in the way of The Bride, but darker—a very attractive variety; Hiawatha, and Hilda. Mr. C. TURNER was 3rd.

With six varieties, Mr. J. DOUGLAS was again 1st; he had Ziska, Duke of York, Firefly, and Mrs. Markham, gold centres; Emperor and Thetis, white centres. Mr. J. W. BENTLEY, Stokehill, Castleton, Manchester, was 2nd; he had Duke of York, The Mikado, Koko, Thetis, and two seedlings. Mr. J. W. EUSTON was 3rd. There were thirteen competitors in this class.

With four varieties Mr. BENTLEY took the 1st prize: he had refined blooms of J. F. Kew, Pinto, Gentle Jackie, and Mrs. Gorton; Mr. J. T. BENNETT-POE was a close 2nd, with Dean Hole, Ziska, Urania, and Bella Ainstie; Mr. R. HOLDING was 3rd.

Single Plants.—Gold centres: 1st and 4th, Messrs. PHILLIPS & TAYLOR, with Mrs. Martin R. Smith; 2nd and 3rd, Mr. DOUGLAS, with Ziska. White centres: 1st, Mr. J. W. EUSTON, with Hilda, and 4th, with Desdemona; 2nd, Mr. R. DEAN, Ealing, with Lottie, a delicate shaded new variety; and 3rd, Mr. J. DOUGLAS, with Mrs. H. Turner.

Seedling Alpines.—White centres: 1st, Mr. J. DOUGLAS, with Snashine, rich black body colour, laced with bright lilac, fine shape, a real addition; 2nd, Mr. J. E. EUSTON, with Hebe, maroon, shading to deep lilac, centre a little weak. Gold centres: 1st, Mr. J. DOUGLAS, with Golden Drop, fiery-crimson, finely shaded; and 2nd, Messrs. PHILLIPS & TAYLOR, with Mrs. F. M. Rotch, shading to purplish-salmon.

In the maiden class for four alpinos, Mr. J. CLEMENTS was 1st.

Premier Alpine.—This was Duke of York, shown by Mr. J. DOUGLAS, in splendid form.

Fancy Auriculas.—There were three collections of these, the Outlanders of the show Auriculas. A fancy Auricula is as indefinable quantity. The Committee should sweep the class away from their schedule. Mr. J. DOUGLAS was 1st; the other two collections might be consigned to the rubbish-heap for the quality they displayed. Let us hope we have seen the last of them on the exhibition table.

Species of Primulas.—In this class strongly marked varieties of the same species are admissible. Mr. J. W. EUSTON, Great Gearies, was 1st with two varieties of *P. japonica*, two of *P. Sieboldi*, two of *P. obconica*, with *P. verticillata*, *P. Forbesii*, *P. farinosa*, *P. floribunda*, and *P. Auriculæ*. Mr. PURNELL-PURNELL came 2nd; he had *P. mollis*, *P. apennina*, a form of *P. intermedia*, *P. denticulata*, with some of the foregoing.

Mr. W. BEALE, Hayes Place, was the only exhibitor of six species, he having *P. cortusoides*, *P. rosea*, *P. floribunda*, *P. farinosa*, *P. Auriculæ*, and a singular variety of the latter, having very large, thick, rounded leaves, and small deep orange-yellow blossoms.

Groups of Primulas.—These could be arranged in a basket or box, and here Mr. PURNELL-PURNELL gained the 1st prize, having showy species as a background, and in the foreground show and brilliant Alpine Auriculas, with Primroses. Mr. J. Vert, gr. to Lord BRAYBROOKE, Audley End, Saffron Walden, came 2nd, with a basket of highly developed varieties of *P. obconica*. Some of the tints of colour were very showy.

Fancy Polyanthus were as usual shown in baskets. Mr. J. D. WILLIAMS, St. Keverne, Cornwall, was 1st, with well-grown plants of good quality; and 2nd, Mr. S. MORTIMER, Swiss Nursery, Farnham.

Coloured Primroses fell short of what we have seen in years past. Messrs. HOUSE & SON, Bristol, were 1st, and Mr. R. STAWARD 2nd.

Double Primroses were better represented by Messrs. HOUSE & SON, and they have evidently hit upon a method of managing the fine old double Crimson, for they had a pan of it in the best condition; also Croussii, Cloth of Gold, white, lilac and red—they were the only exhibitors.

Polyanthus Gold-laced.—Alas! this fine old form fell much short of what we hoped to have seen. A 2nd prize was awarded to three named seedlings of inferior quality. The best single plant was Mrs. Brownhill, from Messrs. HOUSE & SON; Mr. R. DEAN, Ealing, came 2nd, Miss Turner certainly having the most refinement, but the pips only partially expanded.

Baskets of Primroses.—Mr. W. BEALE was 1st with bright, fresh flowers; and Messrs. HOUSE & SON, 2nd.

AWARD TO A NOVELTY.

An Award of Merit was made to a large basket of Yellow Gem Auricula, deep yellow flowers of good form, fragrant, freely produced, the growth compact, an excellent variety for pot culture, from Messrs. W. MILES & Co., nurserymen, Brighton.

Primula viscosa Spring Beauty was also shown in fine character.

CORNWALL DAFFODIL & SPRING FLOWER SOCIETY.

APRIL 15.—The show of the above Society was opened under the able management of the Hon. Sec., the Hon. JOHN BOSCAWEN, on the above date, in the Market Hall, Truro, to which building it had been transferred on account of want of space in the Concert Hall, where it had been held in former years. The entries, however, were so numerous this year that the capabilities of the building were still taxed to the utmost extent. The exhibition was an eminently successful one, the Narcissi shown comprising many flowers from bulbs that are not yet in commerce; while the Rev. G. H. Engleheart's collection of hybrids raised by himself was worth a long journey to inspect.

The Royal Horticultural Society was officially represented at the Show by a sub-committee, composed of the Earl of Ilchester, Rev. G. H. Engleheart, Mr. A. H. Pearson, and Rev. W. Wilks, Secretary.

Spring flowers, other than Narcissi, were well shown, and provided a novel experience for those ignorant of the earliness of hardy flowers in Cornwall, dozens of species being staged that in colder districts will not be in bloom for another month, while it may safely be said that in no other county could such a splendid collection of Rhododendron blossoms have been brought together as that which brightened the long tables with its masses of vivid colour.

Class 1, for the best collection of not fewer than thirty varieties of Daffodils.—1st prize, Rev. A. T. BOSCAWEN, with a fine stand of thirty-nine varieties, comprising—*Back row*: Grandee, Mrs. Camm, Queen of Spain, Empress, Emperor, Mme. de Graaff, very good; Capt. Nelson, J. B. M. Camm, P. R. Barr, and Ada Barbour. *Middle row*: Miriam Barton, Beauty, Sulphur Phoenix, Flora Wilson, Dr. Fell, Duchess of Westminster, Triandrus albus, Gloria Mundi, Lulworth, Mrs. Langtry, Orange Phoenix, William Wilks, Mabel Cowan, Princess Mary, and Autocrat. *Front row*: Maurice Vilmorin, Oederus rugulosus, Nelsoni major, Resolute, Barri con-

spicuous, White Wing, Odorus plenus, Magdaliue de Graaff, Bearice Heseltine, very pretty; Poeticus poetarum, Ellen Barr, Little Dirk, Falstaff, and The Pet. 2nd prize, Mr. P. D. WILLIAMS, with forty varieties, of which Glory of Leyden, Bullfinch, Tom-tit, Crown Prince, Glow-worm, Chaffinch, Tangierine, Cornish Star, all with very bright orange-red cups; and Cassandra, a large and handsome poeticus, were noteworthy. 3rd prize, Lady MARGARET BOSCAWEN, in whose collection were fine King Alfred, Firebrand, with glowing orange-scarlet cup; and Lulworth, to which latter an Award of Merit was granted. 4th prize, Miss F. CURRAY. There were eight entries in this class.

Class 11, for the finest single bloom magni-coronati. 1st prize, Mr. C. WILLIAMS, with Madame de Graaff; 2nd prize, Mrs. NOWELL USTICKE.

Class 14, for six distinct varieties magni-coronati.—1st prize, Mr. J. C. WILLIAMS, with Glory of Leyden, Emperor, No. 226 (an enormous yellow self), Madame de Graaff, Madame Plomp, and Weardale Perfection (Award of Merit).

Class 15, for six distinct varieties medii-coronati.—1st prize, Mr. J. C. WILLIAMS, with Will Scarlet (Award of Merit), Una, Gloria Mundi, and three fine unnamed seedlings; 2nd prize, Lady MARGARET BOSCAWEN, who obtained an Award of Merit for a Narcissus of the same name, and also showed Lucifer.

Class 16, for six distinct varieties parvi-coronati.—1st prize, Mr. J. C. WILLIAMS, with Aurora (Award of Merit), white perianth, and spreading yellow cup margined orange-scarlet; and five unnamed seedlings of great merit. 2nd prize, Lady MARGARET BOSCAWEN.

Class 19, for the finest single bloom magni-coronati.—1st prize, Mr. J. C. WILLIAMS, with No. 154, a large sulphur-white, with slightly drooping poise; 2nd prize, Mr. P. D. WILLIAMS, with No. 83, very large, in the way of Emperor, with waved perianth.

Class 20, for the finest single bloom medii-coronati.—1st prize, Mr. J. C. WILLIAMS, with White Queen; 2nd prize, Mr. P. D. WILLIAMS, with Lulworth.

Class 21, for the finest single bloom parvi-coronati.—1st prize, Mr. J. C. WILLIAMS, with No. 304, a very fine form of Poeticus; 2nd prize, Mr. E. H. WILLIAMS, with Blood Orange, primrose, with orange-scarlet cup.

Class 22, for the finest bloom of English-raised magni-coronati.—1st prize, Mr. J. C. WILLIAMS with No. 348, a very large sulphur-white, with spreading trumpet; 2nd prize, Mr. P. D. WILLIAMS, with a clear yellow, of the colour of Queen of Spain; 3rd prize, Mr. C. WILLIAMS, with a fine bicolor, having a wide-spread trumpet as large as that of M. J. Berkeley.

Class 23, for the finest bloom of English-raised medii-coronati.—1st prize, Mr. C. WILLIAMS, with a large bicolor seedling; 2nd prize, Mr. P. D. WILLIAMS, with Fair Lady; 3rd prize, Mr. P. D. WILLIAMS, with an unnamed flower after the style of Dr. Fell.

Class 24, for the finest bloom of English-raised parvi-coronati.—1st prize, Mr. P. D. WILLIAMS, with a large, circular poeticus seedling, with spreading red eye; 2nd prize, Mr. J. C. WILLIAMS.

One of the most interesting features of the show was a stand of hybrid and seedling Narcissi, raised and exhibited by Rev. G. H. ENGLEHEART, A Flora Medal was awarded to this collection; and a splendid bicolor trumpet named Coronation Year was honoured by a Royal Horticultural Society Award of Merit. The other varieties consisted of Chaucer, a large poeticus, with bright red eye; Vivid, primrose perianth with extended orange-scarlet cup, a very striking flower; Toreh, bright yellow, with yellow cup margined bright orange; Sparklet, sulphur-white, with glowing orange cup; Asteroid, white, with yellow, orange-margined cup; Corona, primrose, with spreading cup, herdered with orange; Delicata, yellow, with orange cup; Peachi, white, with buff eye; Sceptre, with pale yellow-pointed petals, and bright orange cup; Althea, a very pretty flower, with white perianth, and cup centred with pale green and margined orange; Citron, white, with lemon-buff cup; Ariel, white, with apricot cup; Ariadne, white, with spreading pale sulphur cup; Spinnaker, large incomparabilis, with white perianth, and clear yellow cup; Progne, Sybilla, Regent, Electra, and llebe, varying tints of yellow; Siren, sulphur-white, drooping, with very elongated trumpet; Loreley, a graceful white incomparabilis, with wavy perianth; Waterwitch, another very beautiful white; Sea-Nymph and Chloris, white; Plenipo, a double, rather darker in tint than Sulphur Phoenix; and Nos. 20 and 411, two fine bicolors.

Spring flowers other than Narcissi were largely shown, and there were classes for Anemones, Polyanthus, Primroses, herbaceous plants, &c.

Messrs. BARR & SONS, London, for an excellent display of Narcissi, received a Silver-gilt Banksian Medal.

RHODODENDRONS.—Class 36, for the best group of Rhododendron blooms.—1st prize, Mr. D. H. SHILSON, whose flowers, always a feature of the Truro show, were this year magnificent. About 300 trusses were staged, amongst these being Beauty of Tremough, a hybrid between R. Aucklandi and R. Thompsoni, which was awarded a First-class Certificate, while a Flora Medal was granted to the whole collection. 2nd prize, Mr. R. FOX; 3rd prize, Mrs. CONYTON, Pentilite Castle.

Class 37, six trusses of distinct varieties of Rhodo-

dendrons.—1st prize, Mr. D. H. SHILSON; 2nd prize, Mrs. J. WILLIAMS.

Class 40, finest truss of greenhouse Rhododendron.—1st prize, Mrs. J. WILLIAMS, R. Nuttalli, a truss of five blossoms, one of the most remarkable exhibits in the show, each pure white flower being fully 5 inches in diameter; 2nd prize, Mr. J. C. DAUBUZ, with orange R. javanicum.

CAMELLIAS.—Class 41, finest cut bloom of outdoor Camellia.—1st prize, Mrs. J. WILLIAMS, C. reticulata, 6 inches across; 2nd prize, Lady MARGARET BOSCAWEN.

Class 42, finest cut bloom of greenhouse Camellia.—1st prize, Mr. J. C. DAUBUZ, Mathiotiana rubra; 2nd prize, Mrs. J. WILLIAMS.

FLOWERING SHRUBS.—Class 45, group of twelve varieties of outdoor flowering shrubs.—1st prize, Mr. D. H. SHILSON, with Wistaria sinensis, Azalea mollis Brailmont, double Lilac Mme. Lemoine, single Lilac Marie Le Gray, Embotrium coccineum, Spiraea prunifolia fl.-pl., Viburnum plicatum, Prunus japonica alba pleoa, Erica codonodes, Spiraea Van Houttei, and Rhododendron Thompsoni. 2nd prize, Mr. M. H. WILLIAMS; 3rd prize, Mr. A. PENDARVES VIVIAN.

NURSERYMEN.

Of nurserymen's exhibits, Messrs. ROBERT VEITCH & SON, Exeter, had an interesting collection of rock plants, among which were Saxifraga Griesebachii, Draba olympica, Acantholimon libanoticum, A. armeniacum, and Campanula mirabilis, all new introductions; as well as a selection of Magnolias, Acacias, Maples, and plants of Myosotidium nobile and Gerbera Jamesoni in bloom. The firm was awarded a Silver-gilt Flora Medal.

Messrs. GAUNTLETT & Co., Redruth (Silver-gilt Flora Medal), staged Bamboos, flowering Cherries and Plums, Magnolias, one of which, M. Osaka, deep maroon in colour, received an Award of Merit; Daphne Cneorum, Nandina domestica, Ilicium floridanum, and many others.

Messrs. CURTIS, SANDFORD & Co., Devon Rosery, Torquay, showed cut blooms of, and pot Roses, and were awarded a Bronze Banksian Medal.

Messrs. TRESEDER & Co., Truro, who staged a fine collection of Tree Ferns, &c., were awarded a Silver Flora Medal.

ROYAL BOTANIC.

APRIL 23.—The spring show of the Royal Botanic Society took place on Wednesday last, in the gardens at Regent's Park, and was larger than usual. The exhibits were displayed in the corridor, and the overflow in the conservatory. Though the schedule was not composed of competitive classes, as ordinarily understood, there were medals offered for particular exhibits, and the schedule stated that in cases of medals awarded to nurserymen, the Gold Medal would be accompanied by a sum of £3, a Silver Medal by £2, and a Bronze Medal by £1; where awarded to a gardener, the same medals would entitle the winners to £2, £1, and 10s. Most of the exhibits were noticed by us on the previous day at the Drill Hall, and it is unnecessary to refer to them in detail.

Among the Nurserymen, Messrs. B. S. WILLIAMS & SON, Upper Holloway, London, N., were awarded a Silver Medal for a group of Narcissus flowers, and forced Lilacs, Deutzias, &c.; Messrs. WM. CUTBUSH & SON, Highgate, London, N., had a Silver Medal for a group of Carnations, Tree Peonies, Eriogon, &c.; Mr. AMOS PERRY, Hardy Plant Farm, Winchmore Hill, a Bronze Medal for hardy flowers, in which varieties of Iris pumila were very good; Messrs. R. & G. CURTIS, a Gold Medal for a collection of forced shrubs; Messrs. K. H. BATH, Ltd., Wisbech, a Bronze Medal for a collection of Narcissus, and a few Tulips; Messrs. HOGG & ROBERTSON, Dublin, a Bronze Medal for Narcissus and Tulips; Mr. S. MORETHER, Rowledge Nurseries, Farnham, a Silver Flora Medal for Primroses and Polyanthus; Messrs. BARR & SONS, King Street, Covent Garden, London, a Silver Medal for Narcissus, Tulips, and a few hardy flowering plants; Messrs. J. CARTER & Co., High Holborn, London, a Gold Medal for Cinerarias; Messrs. HUGH LOW & Co., a Silver Medal for Schizanthus Wisetonensis, forced shrubs, Carnations, &c.; Mr. J. WILLIAMS, Ealing, a Bronze Medal for table decorations; Miss ANNIE GREEN, 25, Grove End Road, St. John's Wood, a Bronze Medal also for table decorations; and Messrs. JOHN LAING & SONS, Forest Hill Nurseries, London, S.E., a Silver Medal for Mollis Rhododendrons, Laburnus, Wistarias, &c.

From private gardens there were not many exhibitors, but Miss ANAMSON, South Villa, Regent's Park (gr., Mr. Geo. Kelf), obtained a Bronze Medal for a group of Mollis Rhododendrons, a Gold Medal for a group of miscellaneous stove and greenhouse plants, and a Silver Medal for a collection of Hyacinths, Tulips, and Narcissus in pots. CAMPBELL NEWINGTON, Esq., The Holme, Regent's Park (gr., Mr. Thos. Abbott), won a Silver Medal for a group of plants of Rhododendron indicum in pots; EDWARD MORRIS Esq., Avenue Road, St. John's Wood (gr., Mr. J. C. Clarke), a Bronze Medal for Orchids; and Sir FRANK,

T. BARRY, Bt., St. Leonard's Hill, Windsor (gr., Mr. R. Brown), a Bronze Medal for Camellias cut from plants growing in the open. These were arranged in fifty glasses.

CHESTER PAXTON.

THE annual exhibition of spring flowers was held in the large Art Gallery of the Grosvenor Museum recently, when an excellent display was made by local growers. The largest exhibitor was Captain MCGILLYCUPPY, Bache Hall (per Mr. E. Stubbs, gr.), who staged some fine examples of Daffodils and hybrid Primroses and other hardy border flowers. This also included some beautiful plants of Cineraria stellata, which were greatly admired.

The collection sent by Mrs. TOWNSEND INCE, Christleton Hall (per Mr. Thomas Weaver), consisted entirely of cut blooms, including choice Daffodils, very fine specimens of Celsia arcturus, and also Rhododendrons. The exhibit sent by Dr. MILES, The Old Parsonage, Gresford, was, as usual, unique in its kind, and consisted entirely of hardy border flowers, including several choice Daffodils, the more notable of which was a vaseful of double-flowered Cernuus. The Lenten Roses, French Anemones, and yellow sweet-scented Violets, came in for a considerable amount of attention.

The arrangements, which were largely left in the hands of the Hon. Sec., Mr. G. P. Miln, were all that could be desired; and the attendance throughout the afternoon and evening was most encouraging.

COMMONS AND FOOTPATHS PRESERVATION.

APRIL 11.—A meeting of the General Committee of the Commons and Footpaths Preservation Society was held at 25, Victoria Street, Westminster, on the above date. The Rt. Hon. G. J. Shaw-Lefevre presided, and amongst others present were Mr. Edward Bond, M.P., Sir Robert Hunter, Professor J. Westlake, K.C., Mr. Edward North Buxton, Mr. F. D. Mocatta, Mr. J. Buckmaster, Mr. W. Derham, Mr. A. G. Munro, Mr. J. P. Torr, Mr. Lawrence W. Chubb (secretary), and Mr. Percival Birkett (solicitor).

The Chairman reported that he had received a communication from the Charity Commissioners in reply to the protest which he had formulated on behalf of the Society against the proposed alienation of Fuel and other Allotments, notwithstanding the clause in the Commons Act, 1876, which provides that no such allotments shall be diverted from their original purpose except for Recreation Grounds and Field Gardens. The Commissioners now stated that "they have come to the conclusion that the restrictive provisions of Section 19 of the Commons Act, 1876, was not affected by Section 18 of the Commons Act, 1899, and that accordingly the Commissioners are not at liberty to sanction the sale, or letting on building lease, of any part of an allotment falling within the section first above mentioned." Much satisfaction was expressed at the favourable result of the Society's representations, as the decision of the Commissioners will ensure the preservation as Open Spaces of many thousands of acres of allotments set out under old Inclosure Acts. The solicitor reported that the Birmingham Corporation had now agreed to the insertion in their Water Bill of clauses drafted by the Society with the object of securing to the public a privilege of enjoying air, exercise, and recreation on such parts of the common land which they propose to acquire in Radnor, as are not required for the actual works. The area of common land over which the public will obtain the privilege will exceed 1,600 acres. It was stated on the consideration of the Richmond Hill (Preservation of View) Bill that it was now proposed to vest in the Ham Urban District Council, and not the Surrey County Council, the major portion of the riverside land to be given by Lord Dysart as part compensation for a right to enclose the open common fields.

The following resolution was unanimously adopted: "That this committee is of opinion that a settlement of Lord Dysart's interests in his lands at Ham and Richmond which vests the riverside lands to be dedicated to the public (the principal concession for the advantages his Lordship is to obtain) in a small local authority like the Ham Urban District Council which has no adequate rating power, will not be satisfactory, and the committee trusts the land will be vested in the Surrey County Council, which is willing to take charge of them."

It was also resolved to take such steps as might be necessary to ensure that no amendments prejudicial to the interests of the general public are made to the New Forest (Sale of Lands for Public Purposes) Bill.

Other matters considered were the action the Society is taking with reference to the obstruction of the alleged rights of way leading to Stonehenge, the preservation of Lambourne Common, Essex, the enclosed land in the centre of Wandsworth Common, and the provision of parks and open spaces as a suitable means of permanently commemorating the Coronation.

CROYDON MUTUAL IMPROVEMENT.

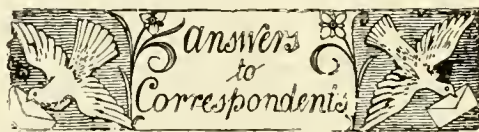
APRIL 15.—"Flowering Plants of the Spring Garden" formed the subject of a very interesting paper read before the members of the above Society by Mr. M. E. Mills, The Gardeus, Coombe House, Croydon, on the above date. Mr. W. J. Simpson presided.

Obituary.

MUNGO TEMPLE.—It was with much regret that in our last issue we had to announce the death of Mr. Temple, Carron House Gardens, Falkirk, which took place, after a long and painful illness, on April 16. Mr. Temple was born in October, 1834, at Captain Cheape's estate in Fifeshire, where his father was gardener and manager. He was well known in the horticultural world as an indefatigable and first-rate all-round cultivator. After he began his gardening career, he served in some of the best gardening establishments in Scotland and England, as well as in some of the London market gardens. His first position as head-gardener was at Campsey Ashe, in Suffolk,

devotion to his duties. From his kindly disposition and readiness to help in every good work he endeared himself to all with whom he came in contact, and he will be much missed in the district. He leaves a widow and grown-up family to mourn his loss. Of Mr. Temple's four brothers only one is now living, Mr. William Temple, gardener at Burley-on-the-Hill, Oakham.

DR. ARCHIBALD DICKSON.—Dr. Archibald Dickson, of Hartree and Kilbucko, who for some time has been in indifferent health, died on Friday, April 18, at his residence, Hartree House. The deceased, who was a medical practitioner in Edinburgh up till the death of his brother, the late Prof. Dickson, some sixteen years ago, when he came into possession of the Hartree estates, was a most generous friend to his tenantry, in whose welfare he took a great interest. Dr. Dickson was an excellent botanist; his interest in horticulture was general. For many years he interested himself in raising *Violas*, working principally for decided self colours, with erect, firm footstalks. Messrs. Dobbie & Co. have introduced several of his raising, two of which—Pencaitland, a fine white variety; and Klon-dyke, a strong yellow sort, are most meritorious. A fancy variety named Hartree, after his own estate, had some popularity ten years ago, but its constitution was defective, which is often the case with the most beautiful of *Violas*.



** EDITOR AND PUBLISHER.—Our correspondents would obviate delay in obtaining answers to their communications, and save much 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 all communications intended for publication, or referring to the literary department, should be directed to the EDITOR. The two departments, publishing and editorial, are quite distinct, and much unnecessary confusion arises when letters are misdirected.

BOOKS: X. Y. Z. In our correspondent's list of books for young gardeners, ante p. 224, the *Amateur Orchid Cultivator's Guide Book* (Blake & Mackenzie) was described as 3s. per copy. The correct price is 5s.—BOOK ON FRUIT WINE MAKING: T. B. We believe that you can buy one at the Bazaar Office (Mr. Upcott Gill), 170, Strand, London, W.C.

DAFFODILS: W. K. Send them to some grower. We cannot name them.—*Daffodil*. The double one is *Telamonius plenus*; the other an ordinary double variety, doubtless a seedling variety.—J. W. F. The Daffodil bulbs have been under treatment now for some time, but no trace of bacteria or fungi has been observed. It is probably a case of being "sick of the soil." G. M.

NAMES OF PLANTS: G. D. 1, *Vinca major*, variegated form; 2, *Vinca minor*; 3, *Muscari azureum*; 4, *Erica carnea*; 5, *Festuca*, variegated form; 6, *Thiopsis dolabrata*; 7, *Cryptomeria japonica elegans*; 8, *Cupressus Lawsoniana*.—H. E. G. *Psoralea pinnata*.—W. Kemp. No. 8, *Ruellia speciosa* (*Dipteracanthus affinis*) (Acanthaceae).—J. H. M. We cannot name varieties of *Narcissus*, or other florists' flowers, as the differences are in a great many cases only apparent to the cultivator.—*Young Gardener*. *Asplenium marinum*.—A. S. 1, *Anemone fulgens*; 2, *Anthurium Scherzerianum*; 3, *Maranta Mas-*

sageana; 4, *M. Makoyana*; 5, *Festuca ovina glauca*; 6, *Trachelospermum jasminoides*, more often called *Rhynchospermum* in gardens.—C. H. P. 1, *Omphalodes verna*; 2, *Pulmonaria saccharata*.—W. McL. *Magnolia Lenné*.—C. L. *Dendrobium clavatum*.—W. H. S., Lancaster. *Cattleya Schroderae*, a very good variety.—T. M. G. *Streptosolen Jamesoni*.—L. J. H. *Dendrobium thyrsiflorum*.—R. W. 1, *Dendrobium pulchellum* of gardens; 2, *Epidendrum Linkianum*; 3, *Pleurothallis Grobyi*; 4, *Sarcanthus erinaceus*; 5, *Masdevallia fulvescens*; 6, *Cypripedium Boxalli*.

NOTICE TO LEAVE SERVICE: H. M. Under the circumstances, and you being without an agreement, you would be entitled to one week's notice. Were you installed in a bothy or had quarters on the place, and filled the post of foreman, it might be different.—D. G. D. A head gardener, in the absence of a written agreement, is regarded as "a domestic," and as such entitled to a quarter's notice, which it is customary to reduce in practice to one month.

PINUS: Correspondent. We have examined both your specimens microscopically, and have compared them with our herbarium specimens. The result is, that we think they are both forms of *P. ponderosa*, but in the absence of cones we cannot be sure.

THE HEIGHT OF A TREE: E. F. H. Obtain a right angle triangle of wood with the sloping limb about 3 feet in length, and with this instrument held with its base parallel with the horizon, take a sight along the sloping limb, directing the line of sight to the apex of the tree, and step backwards or forwards as may be necessary till the base and apex agree with those of the instrument. Put a peg in the ground at this point, and a measurement made thence to the foot of the tree will be equal to the height of the latter—4 feet being added as the height of the observer's eye. Another method is to cut a stick $3\frac{1}{2}$ feet long, and insert it in the ground 6 inches so as to steady it. This must be done on a sunny day; measure the lengths cast by the shadows of tree and stick, and then ascertain the number of times the stick-shadow goes into the tree-shadow, and the result is the height in yards and fractions of a yard.

VINES: Interested. The warts may be occasioned by insects, but usually the cause is a want of balance between moisture in the air of the vinery and the amount of ventilation afforded; excess of the first causing warts and aerial roots to form.

WHITE LEAD PAINT INJURIOUS TO PLANTS: M. Injury might occur in houses recently painted throughout, because of the fumes of the turpentine and driers used in the paint. A month should elapse, for safety's sake, before plants are placed in the glasshouses, the houses being thrown open day and night.

YOUNG FOREST TREES: W. H. T. Gas-tar would undoubtedly kill the trees. A good preparation sold as Ahlbottn's Tree Protective Composition, sold at 21, St. Andrew Square, Edinburgh, is useful. But where many trees have to be protected against hares and rabbits, there is nothing better than enclosing the planted area with rabbit-proof wire 4 feet high. The wire should be bent at a right angle about 1 foot deep, the flange of wire facing outwards; rabbits always commencing to burrow close to the fence, and the buried portion defeats their purpose.

COMMUNICATIONS RECEIVED.—J. Snell—Masdeval—G., Oldham—J. M.—H. W. W.—J. B.—R. L. C.—F. W. J.—A. F.—T. H. S. M. N.—J. S.—E. H. J.—B. & Sons—L. P.—J. C.—L. L.—J. K.—A. B. S.—J. S.—C. H. C.—H. Kempshall—H. J.—Geo. Burrows—B. E. G.

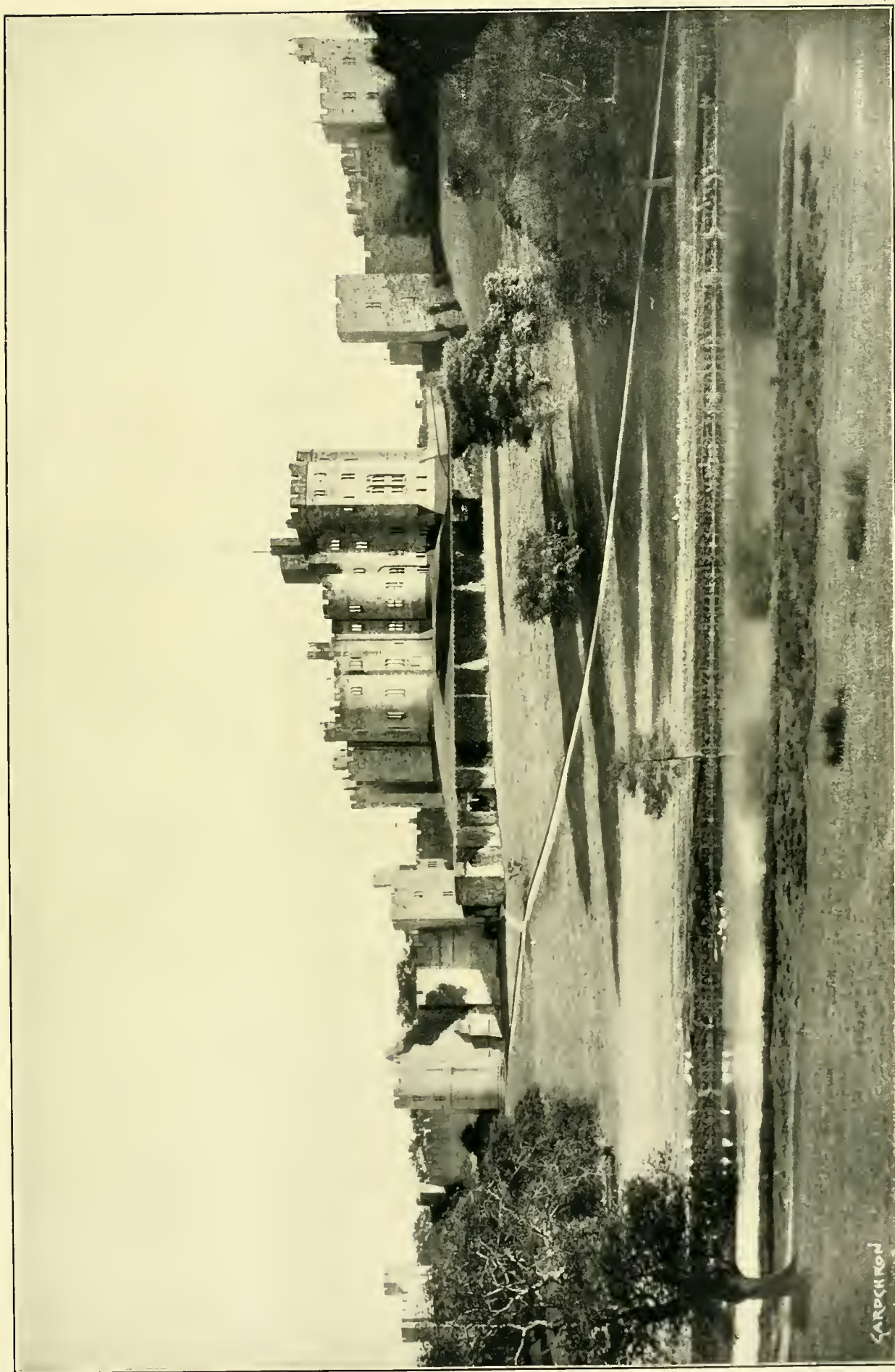
(For Markets and Weather, see p. x.)



THE LATE MUNGO TEMPLE.

from which place he removed to Balbirnie, in Fifeshire, where for years he was a most successful exhibitor of collections of fruit at the famed Edinburgh fruit shows. From Balbirnie he went to Blenheim, and afterwards to Impney Hall to lay out the grounds and gardens there, at which place he manifested his abilities in the way of carrying out new work, and in successful fruit growing. From Impney he removed to Carron House, Falkirk, the late Sir T. D. Brodie's place, and erected ranges of glass, and made new gardens from their foundations. It is over twenty years since deceased took charge at Carron House. His success in fruit culture there was very marked, and probably from no equal area of ground and glass, in the kingdom, has there been obtained a greater supply of garden products. For quality and extent, they can hardly have been excelled.

Mr. Temple rendered valuable aid for many years to the *Gardeners' Chronicle*. He was a man of high moral principle, and untiring



ALNWICK CASTLE, NORTHUMBERLAND, FROM THE RIVER.



THE

Gardeners' Chronicle

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TULIPS OF LONG AGO.

THE origin of many of our old-fashioned flowers is often so obscure that it is a real pleasure to find one, as in the present case, concerning the origin of which there is no dispute. True it is, errors occur in various authors who have not been at the trouble to verify their statements; but the main facts are unaffected thereby. The first Tulips that flowered in Europe, it is certain, were brought hither by Augerius Busbequius, a noble and learned Fleming, Ambassador of the Emperor Ferdinand I., who went in 1554 from Vienna to the Sultan, who saw flowers of the garden Tulips for the first time in a garden between Adrianople and Constantinople. [See *Gardeners' Chronicle*, May 13, 1890.] He returned home in 1555, and not without a supply of bulbs, which flowered in due course. Busbequius immediately went back to Constantinople, whence he finally returned in 1562, no doubt with a further supply of roots, and it would appear, had more sent him after his return. Certainly in 1574, when he was dispatched to the Court of France, he handed over to Clusius, then newly arrived in Vienna, a consignment of imported Tulip seeds and bulbs. These were duly placed in the earth, and as

the Tulips flowered, their descriptions were noted by Clusius, and afterwards published. [But the Dutch had got hold of the Tulips, and grew them at Mecheln in 1570. Ed.]

Along with selfs in a great variety of colours, there were also striped, spotted, and edged flowers. But what is of the greatest interest to us in connection with these Tulips is the all but certainty, which Hakluyt goes far to confirm, that from these the first English Tulips were derived. Clusius and Garrett the apothecary were constantly sending each other plants, and the well-known date Gerarde assigns as that when the latter commenced raising and cultivating Tulips almost exactly coincides with that when Clusius obtained possession of his rich prize.

Meanwhile Tulips were being introduced into Europe through other channels. Physicians, for example, discovered what they thought a specific for cancer in the Tulip-bulb, which was imported to supply patients suffering from that terrible disease. Clusius, moreover, tells a story of the first Tulip he had seen, which shortly is as follows: An Antwerp merchant received a consignment of goods from Constantinople, and along with it a friend sent some bulbs. The merchant thinking these were Onions, had a few cooked, which he ate for his supper, and were obviously so much to his liking, that some were planted in his Cabbage-garden, where however they shortly perished. Others fortunately had been bestowed on another merchant, a careful gardener, who had the gratification of seeing his reputed vegetables transformed into the most brilliant flowers.

By the beginning of the seventeenth century, the Tulip was cultivated in all the chief continental countries, as well as in England, where already there were indications that flowers had been derived from a French, or at least a Flemish source, Gerarde noting "Flambant" as descriptive of a class of bloom he cultivated. By Parkinson's time, distinctive names to sections of Tulips were fairly numerous. Of these we still have the "Parrot" among us; and the "Fool's Coat," a "faire red and faire yellow, parted into guards," in addition to others of which white and crimson formed distinctive marks, continued to be cultivated for at least 100 years. The early varieties derived from *Tulipa suaveolens* would appear to have been highly esteemed, and next to, or perhaps equal to, these the earlier flowering varieties of *Tulipa Gesneriana*. That the bulbs were considered of much value appears from a story related of John Barclay, author of *Argenis*, who had his Tulip-beds guarded by two mastiffs, which however were not so formidable as to protect the objects of their watchfulness from thieves. This curious episode occurred just previous to 1620.

The Tulip, it may be said in passing, was one of the few flowers that Johnson, the editor of *Gerarde*, seems to have cared for, and to him we are indebted for the supposition that Tulips might be the Lilies mentioned in St. Matthew, vi., 28, 29.

The first great florist who treats of the Tulip is Rea, by whom we are introduced to an entirely novel set of varieties and to many sections not previously mentioned. Generally, no doubt early writers, describe them as *Preoces*, *Medias*, and *Serotines*,

but alongside these divisions many sections had been established, and it is at this stage we first discover a tendency towards modern divisions. It is possible to indicate only a few, as, for example, "Edgers," or those with well-defined bands of distinct colour round the edges of the segments. "Agots" (French Agates), which appear to have been named after the stone of that name. These had all dull grounds, clove-coloured, or slaty; "Paragons" (French Paragonée), indicating high-class varieties, so much so, that Rea remarks: "It is a trick much used by those that sell flowers about London to add Paragon to the name of any common flower when it comes well marked, and then impose a treble price." "Morillons" apparently identical with the "Muschatolles" of Clusius, possessed yellow bottoms. "French Modes" or "Bezars" (Bizarres) are also mentioned, and "Brabasons" (Brabant), with purple and white flowers. At this time, and later, the bottoms of the flowers might be any colour, blue, greenish, white, yellow, &c. "Semper Augustus," the variety that brought so much money during the Dutch mania for Tulips, is described as a small flower, but fairly well marked. It is indeed clear that Tulips at this period were varied to a degree they have not been since, and embraced all colours, from white to black, "Chimney-sweeper" being almost black, though not quite so dark as "The Witch," noted by Gilbert, which was "as near as may be to black"—"the bottom large, of a perfect black satin colour."

Early Tulips were forced by the middle of the century; hotbeds composed of dung being utilised for the purpose, and the flowers were bloomed early in January. With the end of this century, however, the Tulip entered on another stage, and became one of the most rigidly correct of all florist flowers. Addison, who appears to have been fond of the flower, has more than once compared Bevis of Fair Ladies wearing their new fashioned hoods, to beds of glowing Tulips, and did his best, by means of ridicule, to stop the craze, but without effect, for from this time the Tulip, as a garden flower that everybody might grow, became, till lately, the monopoly of a few, some of whom disdained to cultivate any other than this one plant!

So lately as 1792, Maddock's classes of Tulips were almost identical with those at the beginning of the same century. He names "Primo Baguets, Baguets Riguats, Incomparable Verports, Byblomens, and Bizards." The first named were derived from a variety called "Bagget Primo," very tall on the stalk, whence, the name "Baguette," with pale purple flowers and white bottoms. This was the parent of a race called after its name. The "Baguets Riguats" in the same way were derived from one sole breeder, named "Beau-Regard," a paler flower than the first named, but equally fine in the eyes of the florist. The name has been the occasion of not a little discussion, as its origin after a time had become obscure. "Baguette" was simple, but "Rigant" might have been either the name of a man, or, from the French "Rougeante!" The Bizarres seem always to have been derived from a variety of breeders, which possessed yellow bottoms.

Shortly after the date indicated, the classes were regulated as at present, into

Bizarres, Bybloemens, and Roses, formerly "Verports."

Rare Tulips appear to have always commanded a high price. The most expensive when Rea wrote was £5, and prices seem to have fluctuated considerably till about a hundred years ago when they became very high. Hogg states, "A moderate collection of choice Tulips could not be purchased for a sum much less than £1,000," and we read of single bulbs being actually sold for £100 and £300 each. In the ordinary price-list of Groom, of Walworth, for 1833, the sums of 4 to 20 guineas and £50 are asked for single bulbs of different varieties. No opportunity for a Will Wimble to carry a fine Tulip-root from one to another in these days! Nor had we an Addison to light up the period with gentle sarcasm, that being left later to the French pen of Alphonse Karr, which portrays (so delightfully) the experiences of M. Arnold with his twelve Tulips.

On the whole we may be glad to have fallen on happier times. We lack no doubt the remarkable variety and the beautiful flowers that gardens could boast of in the seventeenth century, but we have a very fair supply, much better than could be had during the whole of the eighteenth, and most part of the nineteenth centuries. And one class we ought to be grateful to the florists for—the lovely "Roses" of several degrees of intensity. *B., Scotland.*

ORCHID NOTES AND GLEANINGS.

LÆLIO-CATTLEYA "PRINCE LEOPOLD."

M. CHARLES PYNAERT in the current number of the *Revue de l'Horticulture Belge*, figures and describes a hybrid Orchid raised in the Royal Gardens at Laeken by M. De Bièvre. This hybrid was obtained by crossing *Laelia cinnabarina* ♀ with the pollen of *Cattleya eliocensis alba*, a pure white variety. The flower of the hybrid is of a fine orange-yellow tint. It has one great merit, that is the duration of its flowering, which is not less than six weeks.

LÆLIO-CATTLEYA × OPHIR.

An exceptionally fine variety of this showy hybrid between *Laelia xanthina* and *Cattleya Dowiana aurea* is in bloom in the collection of H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood). The flowers, which are as large as those of a *Cattleya labiata*, have the sepals and petals of a bright golden-yellow; the lip also is yellow, with a bright orange-coloured disc, and an attractive rose-purple veining on the front lobe. A curious feature in this pretty hybrid is the increased intensity of the red streaks seen on the under-side of the column of *Laelia xanthina*, which in the hybrid entirely cover the under-side of the column with purplish-red. In most of its features it partakes of *Cattleya aurea*, but in this seemingly minor character it is even an improvement on *L. xanthina*. The original plant was raised by Messrs. Jas. Veitch & Sons, who obtained an Award of Merit for it, October 29, 1901. In that case it flowered in autumn, but Mr. Pitt's flowering in the spring is much finer.

THE ABUSE OF ORCHIDS WHEN IN FLOWER.

A few observations in reference to this subject may not be out of place now that the principal Orchid-flowering season is at hand.

What sad statements are often heard of deterioration when inspecting a collection of Orchids. When the reason is asked, the answer is, "Oh, as soon as I have a fine flower-spike or a well-flowered plant, it is taken into a cold conservatory or one of the apartments, or the flowers are allowed to remain on the plant till they decay."

It is a grievous thing for a cultivator to be obliged to take plants into unsuitable places. Employers should remember that if Orchids are treated in this manner they must stand the loss. It is very hard to expect the Orchid-grower to keep the plants in good health unless he is allowed to use his discretion respecting such matters.

What is more discouraging to a grower who loves his plants than to know that when he produces a fine spike he is as likely as not to be bringing about the death of the plant! To be a successful cultivator of any species of plants, everyone will admit that there must be a certain feeling of attachment of the grower to his plants; and how is it possible that this can be maintained when an employer insists on the plants being so barbarously treated? A true lover of plants, above all things, considers their manifold and special requirements.

There are many forms of bad treatment, and probably the worst is when several plants of one variety are in flower together, and they are shaken out of the potting materials, and placed altogether in some ornamental vase for the room decoration. Or the plants may not be shaken out, but allowed to go into the rooms as grown, which is not quite so bad as the first case, provided they are left in the house only for a day or two. So far all is well, and the employer is pleased with the fine effects obtained. Then, take the temperature of the rooms in which they are kept in the evening, in many cases quite hot; but in the early morning, when perhaps there are several degrees of frost, the windows are thrown open wide, which is detrimental to the Orchids, even if right for the human inmates. Apart from these common liabilities, the strain upon an Orchid when in flower is always severe when growing in the Orchid-house, but this is much increased in the dry atmosphere of a living room.

Another very common mistake is to allow the flowers to remain on a plant till they begin to decay, and although this is not so bad for the plants as to take them into the dwelling, still the injurious effects are felt for two or three years afterwards. The flowers of an Orchid should be removed from the plants after a reasonable period of time, and placed in vessels of water in the Orchid-house, if not required for other purposes. The length of time the flowers may remain on a plant will depend on its health and vigour. Providing it is a strong plant with numerous roots, the flowers may remain much longer than on one that is weakly—in fact, such plants should not be allowed to flower at all. Indeed, that is the only method by which an Orchid can be restored to health. Many of the most successful cultivators of *Odontoglossums*, although they may not be called upon to abuse the health of their plants in any way, would not let even their strongest plants retain their flowers every year. An employer, when he expresses a wish to have this or that Orchid taken into the dwelling or the conservatory, should remember that these plants do not resemble *Codiaeums* which when the bottom leaves are lost may have the top removed and struck anew, and thus secure a new plant in place of the one that is spoiled. The propagation of most species of Orchids is

a very slow process, and owners of collections must expect to have constantly to buy in fresh plants to take the places of those lost by exposure to unsuitable conditions. W. P. Bound, Gatton Park Gardens.

ALNWICK CASTLE GARDENS.

(Concluded from p. 271.)

I now come to the gardens proper, though, had space permitted, I could have noted much interesting matter in the park and grounds, and before leaving them I must say that the forester's art and work is so closely connected with that of the gardener, and both have combined to make of the park and grounds a charming entity.

The flower-garden at Alnwick (see fig. 89, p. 287) is surrounded on two sides by tall, clipped Yew hedges, is situated close to the kitchen-garden, and at the lower end stands a conservatory of large size, with the vineries and forcing-houses at the sides. The greenhouses and hot-houses for the cultivation of plants stand a little nearer to the Castle, and in the vicinity of the gardener's house, about the middle of the garden. The ducal owner having other large gardens, and not residing at Alnwick in the period from early spring to early autumn, the gardener has not much early forcing of any kind to carry out, the supplies coming from the other gardens; still, the post of gardener at Alnwick cannot be considered a sinecure, as he has plenty to do in making preparations on a large scale for an average number of over 100 persons daily in the late autumn and winter.

The upper portion of the flower garden is much higher than that near the conservatory, and rises from the pond in the centre. The latter was recently planted with modern varieties of Water Lilies. On one side of the pond a square area is surrounded with a pergola, as at Hatfield, of Lime-trees, which are closely pruned when out of leaf, and the shoots tied in, and forms a shady retreat and promenade. The square of turfed area enclosed is used for bowls and croquet. The opposite side of the pond is sunk below the level of the garden, and is used as a melony, &c. The flower garden from this point rises considerably, and occupies a wide area; and the beds on the upper differ from those on the lower level, which are mostly geometric, and filled with spring-flowering plants. The beds on the upper ground are formed into many devices, edged with Box, and planted with dwarf shrubs having variegated foliage, Hollies being much employed in them. At the sides exist larger beds, which are festooned with Ivies and other climbers, and plants of *Periwinkle* are largely used in them. At the summit stand some beautiful old wrought-iron gates and fencing, with noble stone arches, giving access to a walled-in fruit garden.

No mention of the flower garden would be complete without referring to the extensive borders of herbaceous perennials, which run along the lower end of the garden, and have recently been remodelled, and the ordinary plants removed and late summer and early autumn flowering plants substituted for them. Another feature is the planting of a portion of the flower-garden near the entrance to the same with perennial *Asters*, *Phygelius capensis*, *Erigeron speciosus*, and other plants that flower in the autumn; these being used as "dot" plants, with Lilies and other bulbs liberally planted between them.

The glasshouses and the conservatory have been extensively altered in recent years, much of the staging in the conservatory having been

removed and shallow beds substituted for it, and a wide central path formed, together with an artistically-arranged rockery at the back of the house, masking a lot of hot-water pipes, and affording situations for climbing plants. The roof is supported by iron columns, to which some very fine climbers, such as *Luculia gratissima*, a very large plant, which flowers grandly; fine *Fuchsias*, *Cassia corymbosa*, *Habrothamnus Newelli*, and *Jasmins* are trained. The portable plants are now arranged in groups or beds, and, of course, more attention is paid to the late summer, autumn, and winter-flowering plants than to

have no stoking to do here, all the houses being heated by steam, which demands the attention of an engineer at all times. The boilers are placed near the gardener's house, and unfortunately a large smoke-shaft likewise.

The Peach-houses are large and good, and the trees in fine condition, owing to there being no need to force them, and late varieties are those mostly grown. Of *Royal George*, *Stirling Castle*, and *Noblesse*, there are some grand trees in two of the earlier houses. The walls in these houses are covered with *Roses* and *Figs*, which succeed capitally. *Tomatoes* are grown in large quantities.

could scarcely be found elsewhere, the latter being grown instead of the *Morelle*. A wall with an eastern aspect has been planted with *Gooseberries* as cordons; and on a wall with a west aspect there are splendid *Pear-trees*, viz., *Glout Moreau*, *Beurré Paridans*, *B. Rance*, *Winter Nelis*, and *Doyenné du Comice*, which crop well in most years. *Plums* are grown on east and west aspects, the *Victoria* being the favourite variety on account of its abundant bearing; and *Coe's Golden Drop* is equally fruitful, and affords fruit fit for dessert as late as the second week of November.

Apple-trees are planted as bushes, in lines

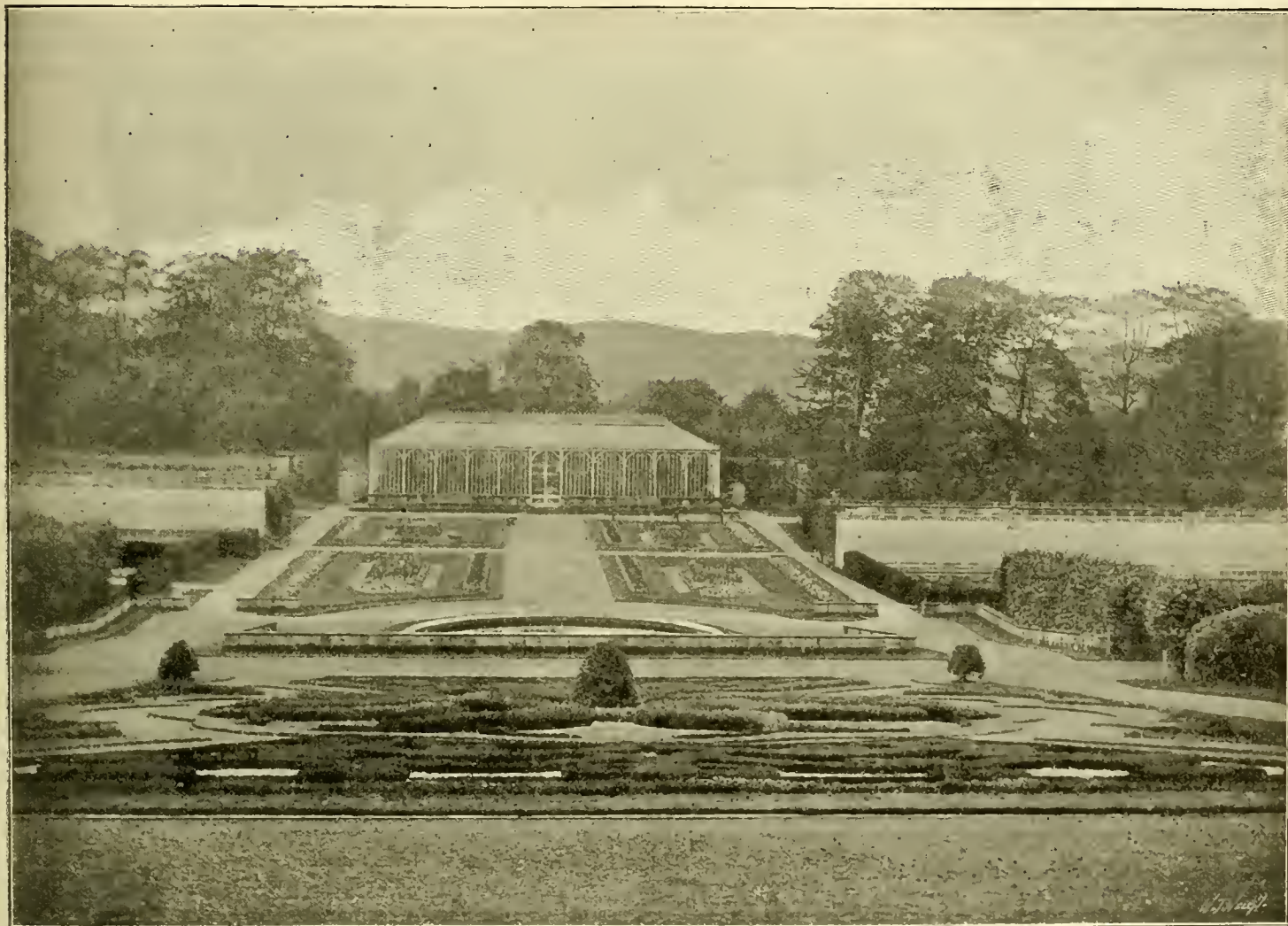


FIG. 89.—THE CONSERVATORY AND FLOWER-GARDEN AT ALNWICK CASTLE. (SEE P. 286.)

others. In this house are some fine *Tree-Ferns* and *Palms*.

There are some excellent span-roofed plant-houses in the kitchen garden, also *Palm-houses*, large quantities of plants being needed for the decoration of rooms, and large batches of plants of a few kinds are now grown in preference to a great variety, such being found of greater service. *Chrysanthemums* that flower late are cultivated in large numbers. There are six large *vineries*, and during the past three years most of these have been replanted. The large *Pine-stoves* here are now devoted to other uses, the culture of *Pineapples* having been discontinued. The houses have mostly iron and copper ribs. The young gardeners

Now we come to the kitchen-garden, which covers, together with the area under fruit-trees, about 7 acres, most of which is enclosed by high walls. Though so far north, very fine crops of *Apricots*, *Peaches*, and *Nectarines* are grown on the south walls; the trees, as well as those of the trained *Cherry*, *Pear*, and *Plum*, being protected in the spring. The trees on the walls are excellent examples of training, and bear witness to the good work of the late Mr. Ingram, and more recently of Mr. Harris.

Currant cordons on north walls supply fruit late in the season. *Cherry-trees* are planted on north-eastern aspects, and finer trees than those of the *May Duke* and late *Duke Cherries*

near the paths, and a few as cordons on warm walls, *Cox's Orange Pippin* fruiting capitally on such walls. *Pears* are grown entirely as wall-trees, and the kitchen-garden being divided by walls into three parts, wall-space is abundant. Small fruits of all sorts do well in the light loamy soil.

A bothy which permits of each young gardener having a separate bedroom, a common bath-room, sitting and dining-rooms, and rooms for the foreman, has been erected, and forms a sightly and suitable entrance to the kitchen-garden. G. W.

[The *Dairy-grounds*, illustrated in our Supplement this week, were remarked upon on p. 273, *ante*. Ed.]

FAIRY CUPS.

(Concluded from p. 254.)

ALL this looks simple enough on paper, but what skill and patience have been required for the working out of the facts and details, and what infinite wisdom is displayed when the process is understood! And now comes a very important question, and one which it will take some time to answer satisfactorily: What purpose is served by the beautiful pigment, by the vermilion enamel with which the inside of the chalice is adorned? This opens up a wide field of enquiry, and involves the origin, use, distribution, and development of the colour-sense in animals and man. Whole volumes have been written thereon, and many others may yet be penned before the theme is exhausted. I can only here refer to two or three of the principal points. In the first place, brilliant colours are frequently associated in Nature with virulent poisons. Here the colour may be regarded as a danger-flag, just as the piece of red cloth is which the watchman employs on the line. The gaudy plant or animal says to such as would enroach, "Beware of me. If you seize me and devour my flesh, I may call on you to pay a heavy penalty. Under my ruddy coat I carry a phial filled with the deadliest poison, and he who drinks thereof will never want for drink again." Thus, the purple berries of the Deadly Nightshade and the Bitter-sweet, the brilliant epiderm of the fly-agaric, and the highly-coloured integuments of many caterpillars, are to be treated with respect, and kept at arm's length. In such cases the colour is admonitory, and it is interesting and instructive to observe how quickly the animal world reads the warning. I have known sheep and cattle introduced into pasture-lands where poisonous herbs had abounded for generations. The former inhabitants had always avoided the plants, and their direful properties were almost or entirely unknown to the farmer, till the new cattle devoured the rank herbage, and paid for the deed by their surrender of life.

But "once bitten, twice shy;" a moral which man is usually much slower to learn than any other animal, and especially in relation to the sparkling but poisonous cup, with its ruddy hue. In the next place, the colour serves, in many instances, exactly the opposite purpose. It courts the attention of various animals, and so secures important ends. The bright colour of the harmless hips-and-haws, the gaudy hues of the Crocus and Tulip-flowers, as well as the richly-dight wings of the butterfly, are all intended as advertisements. So is it with many of the fungi. Their fleshy substance or mealy germs prove very attractive to different insects and animals, and hence, when they are ready for the visits of their allies, they put out a notice in the shape of a golden goblet or crimson chalice, which speedily allures the fly or snail, the mouse or squirrel, to their retreat. Who does not see in all this a wonderful adaptation of means to ends?

It often happens, however, that we find beauty for its own sake in Nature. You cannot always affirm that some useful end is served by this or that pigment, design, or arrangement. When He did His work, the Creator looked upon everything He had made, and pronounced it very good. He

who has endowed us with artistic faculties and æsthetic tastes, would not himself be destitute of these things; and if He formed us to take pleasure in the beautiful, we cannot logically conceive that He would himself be indifferent to its charm, or would produce a variety of things to fill the earth, without endowing some at least with beauty for its own sake. We argue from analogy. The wealthy man brings flowers and shrubs from distant lands to adorn his park or fill his conservatory, though he knows they can never yield him fruit, bring him any monetary return, or be put to any practical use save that of ornament. But if, when the ball or the dinner is given, these plants adorn the hall, ornament the table, hide ugly corners, and brighten the mansion, their beauty is utility. It is often so in Nature. It must be an advantage to man to possess an eye for the beautiful—if, indeed, the eye does not create beauty—as some philosophers assert. Beauty contributes largely to our happiness—how largely few of us can conceive, unless we have been forced at some time or other to dwell in the midst of surroundings where its elements were unknown. We see the effects of beauty in the smile which plays on the face of an invalid at the unexpected arrival of a splendid bouquet. We observe it in the ecstasy of a child who is permitted to witness a performance. We discover it in the features of a lover of art as he gazes fondly on a famous masterpiece. In these and many other ways the beauty of Nature and Art affect the beholder. What we see in others we also feel in ourselves. What delight is afforded by the sight of a landscape, where green fields, verdant vales, blue mountains blend, and lead the eye upward to the cloud-flecked sky!

One further question remains to be considered among the many we could wish to answer. It may be asked from what source the Fairy-cup obtains the gorgeous erubescence of its interior. Whence the carmine, vermilion, ruby, or cinnabar colour, which makes it so attractive? Much light has been thrown on this subject of recent years by the discovery of aniline colours in the unpromising surroundings of the gas-works. A few years ago it would have been difficult to lead men to believe that the ebony rock brought from the bowels of the earth and sold under the name of coal, would supply us, not only with gas to illuminate our houses and workshops, but with sugar or saccharin fit for domestic and medicinal purposes, and pigments of every hue for the dyer's art. Yet so it is.

The colours of plants undoubtedly depend in the first instance upon the sun for their production. It is, however, evident that in Nature's magic laboratory the most beautiful colours, as well as the most wonderful plants, can be produced during a period of the year when Old Sol is chiefly conspicuous by his absence. Diffused light, however wanting it may appear to be in its direct effects, is still working the factory; and a myriad interesting plants are laying their traps to catch a sunbeam, even when the beam is doing its best to evade being captured.

Why one fungus is crimson, another orange, a third green, and a fourth yellow or blue, is, I believe, a question which no one has yet been able to answer satisfactorily. Modern theories have done much to make

the problems respecting the colours of flowers clear, but the fungi are subject to totally different conditions, and must be studied from an entirely different standpoint. We can see a reason for the different colours of insects and birds. They can thus be readily identified and distinguished by their friends, or can thereby the more easily conceal themselves from their foes; but in the cryptogamic world this argument will not apply. One Fairy-cup or fungus never goes to pay court to the fair lady of the same class who lies ensconced behind a neighbouring log; there is no love-making among the fungi, and we can hardly say that there are any foes to shun. We are therefore driven, for the present at least, to the conclusion that while these different colours are to a great extent immaterial to the vegetable itself, they serve the useful purpose of making the dull world more beautiful and bright. Attraction is often blended with admonition.

Some of the nearest allies of the Fairy-cup are among the most dreaded of pests. They fix themselves on fruit and timber-trees, producing a terrible gangrene or canker, which is as destructive in the vegetable world as cancer is in the animal. In such cases it is possible that we may regard the fungus as a wicked aggressor, not satisfied with its lawful domains, but carrying slaughter and death into the domains of others. There surely is something of instruction and warning, encouragement and admonition, inspiration and reproof, for the humblest man who treads the earth in such a study as this. Dull as our surroundings may be, and unattractive as may be the sphere in which we live and move, we can each of us if we will, by our inherent vitality, exercise a magic influence over the dead material around us. Life springs out of, and supports itself upon death. We can breathe life and beauty into that which is decayed and diseased, and even into that which is mouldering and ruined, if only we are prepared anywhere and anyhow to fulfil the great mission of life. A Howard can transform the prison-house, and a Fairy-cup can make a rotten stick to blossom as a Rose. *A Sussex Naturalist.*

QUEENSLAND PALMS.

In the issue of the *Gardeners' Chronicle* last to hand, January 11, 1902, I notice an article on three of our Queensland Palms. As the writer states, with regard to one of these, the *Scaforthia elegans*, of *R. Brown's Prod.*, certainly much confusion has taken place. However, he, the writer, has not mended matters, for instead of throwing light upon the subject, he has added to the confusion, for the tree represented as *Ptychosperma elegans* (*Scaforthia elegans*) does not in any way resemble that Palm, but if one of our Queensland Palms at all, it is more likely to be our "Black Palm," *Drymophloeus Normanbyi*, F. M. This may at once be seen by observing the form and position of the pinnae, which appear to be in clusters, and are divided into several, usually nine, narrow lobes to the base; the rachis being furnished to near the base with pinnae. The leaves attain a length of 8 feet. The leaves of the first mentioned are about 3 feet long without the petiole, which is from 9 to 12 inches long, segments on each side of rachis about 18 inches, those near the centre about 1 foot long and 1½ inch wide in the broadest part,

the base contracted, the apex very oblique and crose, the terminal ones truncate and toothed. Ever since I can remember, your Journal has been most certainly one of the highest authorities upon matters appertaining to plant life, therefore it is with some diffidence that I presume to dispute any statement in its columns, but I feel sure that you will allow me the privilege of correcting errors about the Queensland plants which may be referred to. *F. Manson Bailey*. [Mr. Manson Bailey's letter has been submitted to our Berlin correspondent, who derived his information from the Buitenzorg Botanic Garden, and does not altogether agree that an error has been made; but the subject is under further examination. ED.]

purple, the blotching on the sepals and lip being of a peculiar purple tint of yellow, and those on the petals purple with darker lines, and a shade of yellow showing through it.

A SECOND EDITION OF THE "BOTANICAL MAGAZINE."

THERE have been second issues of various series of the *Botanical Magazine*, but probably very few persons are aware that a genuine second edition was ever commenced. I myself, although I have investigated the history of this publication to a considerable extent,* was unaware of the fact until Sir Joseph Hooker brought it to my knowledge a few days

nean system by the natural, and this probably had something to do with the scheme of republication. In 1826 Sir William completed the fifty-third volume of the *Botanical Magazine*, and his name appears on the title-page of the fifty-fourth volume, in which he gave the natural orders of the plants, as well as Linnaeus's classes and orders. This was continued to the end of the ninety sixth volume in 1870, since which date only the natural orders have been given.

Only one volume of the new edition was published. This contains 119 plates, belonging to the orders Ranunculaceæ to Saraceniacæ, arranged in the same sequence as in De Candolle's *Prodromus*, and it was issued

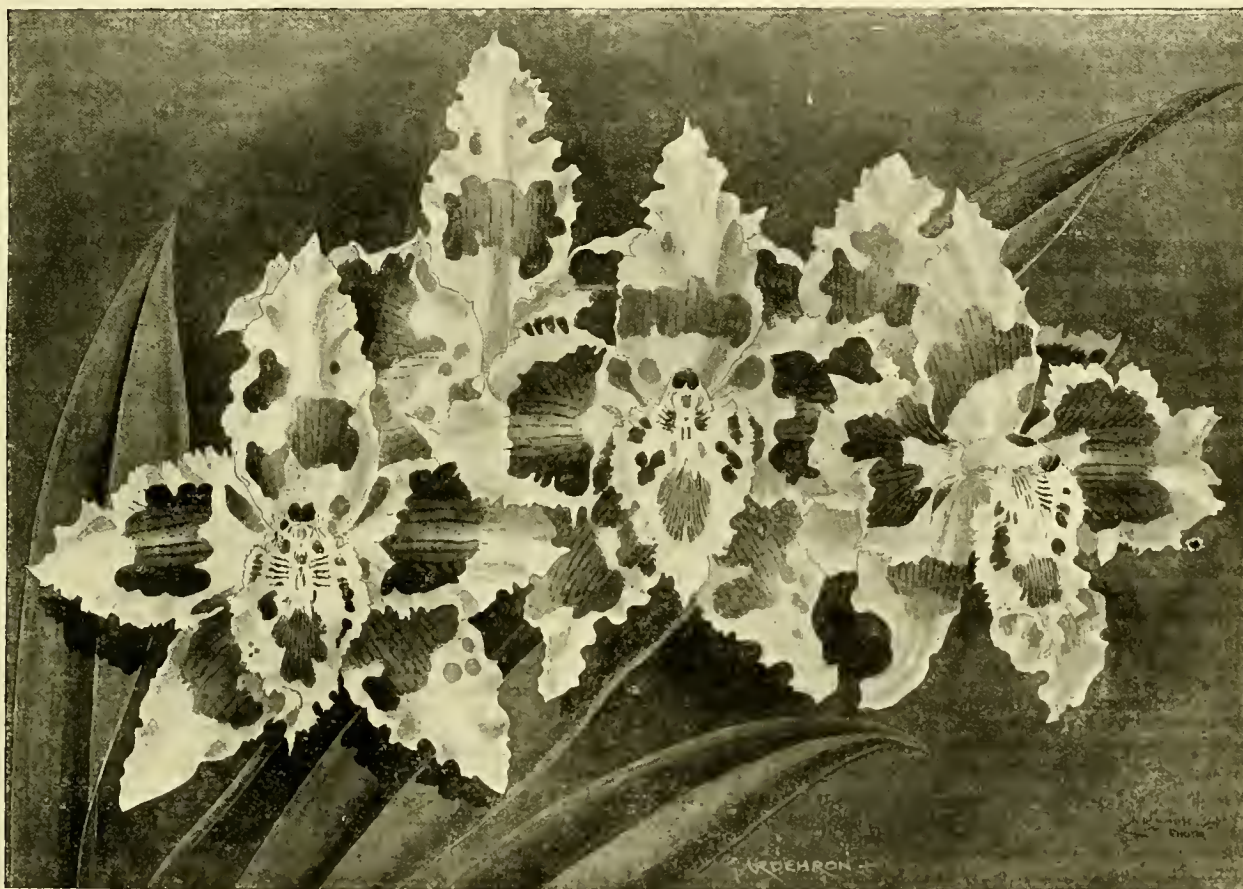


FIG. 90.—ODONTOGLOSSUM CRISPUM "MISS LUCIENNE LINDEN."

ODONTOGLOSSUM CRISPUM "MISS LUCIENNE LINDEN."

BLOTCHED forms of *Odontoglossum crispum* may emphatically be said to be the favourite Orchids of the day, and importations flowering for the first time are eagerly scanned for spotted forms, and especially those with purple colouring on the reverse of the segments. Experts on seeing such for the first time can readily estimate the possibilities in it of greater beauty when developed, and few novelties lately flowered seem to offer better possibilities in that direction than the remarkable variety *O. crispum* Miss Lucienne Linden (fig. 90), which was exhibited as a very small plant by Messrs. Linden, of Brussels, at the Royal Horticultural Society's meeting on March 25, when it gained an Award of Merit.

The flower is of the best type, the reverse side of the segments heavily tinged with

ago. Sir Joseph had forgotten the existence of it until he came upon it when engaged upon some historical work. A few particulars may interest some of the readers of the *Gardeners' Chronicle*.

The addition to the old title is: "A new edition, with amended characters of the species; the whole arranged according to the natural orders, by W. J. Hooker, LL.D., F.R.S., &c. To which is added the most approved method of culture, by Samuel Curtis, F.L.S." The plan was to republish the plates (nearly 2,800) of the first fifty-three volumes, with amplified descriptions and observations, arranged under their respective natural orders. At that date the leading botanists of this country, Hooker and Lindley, were keen on replacing the Lin-

* See *Gardeners' Chronicle*, series 3, vol. i. (1887), beginning at p. 315; also vol. xix. (1896), p. 389, and vol. xx. (1899), p. 651.

in 1833. It opens with a brief exposition of the merits of the natural system, by Sir W. Hooker, followed by definitions of the classes, order, genera, and species of the plants figured, with additional information on their history and cultivation. The plates bear new running numbers, as well as the original ones, and, on the whole, they are more carefully coloured. Had this project been successful, the Hookers would have edited an edition of the *Botanical Magazine* from the beginning to the present day; as it is, it has been in their hands for more than three-quarters of a century—probably a "record" in editing; and Sir Joseph is as keen as ever in keeping it going. It is not surprising, however, that this venture was unsuccessful, because few persons would care to take what they already possessed in a different form; and a period of waning interest in botany and

horticulture had already set in. In its most flourishing time, the *Botanical Magazine* had, as Sir Joseph Hooker informs me, a sale of 3,200 copies; in 1844 this had dropped to 400 copies, and the expenses exceeded the returns.

On thing inexplicable in connection with the second edition is the fact that it does not appear to have been advertised in the continuation of the original edition, though the proprietor and editor were the same. In the Kew library there is a set of the original wrappers of the magazine for the year 1833, containing advertisements, notices, &c.; but there is no mention of the new edition, and the only reference to it I have found in contemporary publications is in London's *Gardeners' Magazine*, ix. (1833), p. 350, where the first number is favourably noticed. W. Botting Hemsley.

TASMANIAN PEARS AND APPLES.

LARGE consignments of Tasmanian Pears and Apples have been received in London this week, and some thousands of cases have been sold by auction in Covent Garden Market at good prices, for there is always a demand for these supplies. Tasmanian Apples now take their place amongst the most valuable imported hardy fruits, and their quality is often fully equal to that of home-grown Apples, notwithstanding the long journey, and the fact that they have to be gathered before they are matured. Until recently, however, comparatively little has been done in sending Pears, but there is a prospect that this part of the trade will be considerably extended in the future.

A few days ago the following letter from Dr. Benjafield, of Hobart, Tasmania, was placed in my hands in reference to the importation of Pears from that colony: "I have just been reading the new edition of the *Gardeners' Assistant*, and having noted your remarks about Tasmanian Apples and Pears, I thought you might think it worth while to inspect the first large consignment of Pears (700 boxes) which I am sending by the *Ss. Medie*, to arrive in London about the middle of April, and I shall send another consignment of 1,000 cases in a month's time. If you inspect them I should be glad if you would send me a report on their appearance, flavour, carrying quality, &c. You will recognise the varieties, except "Giblin," which is a seedling raised here from Winter Nelis, and probably *Ne Plus Meuris*; it is of grand quality, the fruit larger than Winter Nelis, and a much better cropper. All these Pears are gathered when far from ripe, some not more than three-parts grown, so the flavour may be faulty. Pears like Chaumontel and Bon Curé (Vicar of Winkfield) become in our sunny land, and warm, sandy soil good dessert varieties; indeed, Chaumontel is first-class, as are Beurré Clairgeau and Beurré Capiaumont. I have about 5000 trees, and some sixty varieties, comprising all your long-keepers. Josephine de Malines will ripen on the tree with us, and all Pears mature so much before gathering that we can only get such varieties as that just mentioned, and Olivier de Serres, to keep about a month; hence we gather early to ship to England."

By the courtesy of Messrs. O'Kelly, of Covent Garden Market, to whom the Pears referred to by Dr. Benjafield were consigned, I have been able to inspect the cases of fruits received early this week, and I was pleased to find that the majority had arrived in satisfactory condition, as fresh and sound as if only just gathered; but it was only possible to give an opinion respecting the appearance, as with a few exceptions the fruits had been gathered so early (as mentioned above) that they were not advanced enough for eating. Where the fruits had partly ripened in transit, like Pitmaston Duchess, they had suffered to some extent, which was especially unfortunate as the fruits were very fine examples of this variety. No doubt it is in this respect that the chief difficulty will be found in importing Pears from the more distant colonies, but flavour is of such importance in these fruits that unless they can be sufficiently matured before packing to ensure the development of their distinctive qualities, their value will be greatly reduced.

The greater part of the consignment was made up of Vicar of Winkfield, under the name usually adopted in France, i.e., Bon Curé. The sample I saw was excellent in several respects, the fruits large, even, and all that could be wished; but they were not sufficiently ripe to enable me to determine if they verified Dr. Benjafield's statement as to quality. Chaumontel and Beurré Clairgeau were each represented by some thirty cases, and both varieties were in fine condition. Of Beurré Diel there were ten cases of excellent fruit, and there were the same number of the seedling Giblin, which is described as an improved Winter Nelis. This ought to be a valuable variety, but I have some fruits for ex-

amination, and when they are ripe it will, perhaps, be possible to give an opinion on that point. The fruits are of medium size, about $3\frac{1}{2}$ inches long by $2\frac{1}{2}$ inches wide; rather variable in shape, some being ovoid tapering to the eye, while others are turbinate with prominent ridges or knobs round the eye. The latter form is rather suggestive of Glout Moreau. The colour is green with some russet and dark, metallic red on the sunny side. Most of the other varieties were represented by two to four cases only, and were sent probably for experiment. They comprised Beurré Bosc, Beurré d'Anjou, Autumn Bergamot, Beurré Capiaumont, Glout Moreau, and Pitmaston Duchess; all except the last-named being in capital condition. Three cases of representative Pears were selected, and packed for presentation to His Majesty the King.

Besides the Pears, there was a grand lot of Apples, the majority of which had arrived in a highly satisfactory condition. Especially fine were Cox's Orange Pippin, Scarlet Nonpareil, Ribston Pippin, French Crab, and New York Pippin. These were fresh, juicy, and finely flavoured, but I did not think the Cox's were equal in quality to the best home-grown fruits. R. L. Castle.

The Week's Work.

THE KITCHEN GARDEN.

By T. TURTON, Gr. to J. K. D. WINGFIELD DIGBY, Esq., Sherborne Castle, Dorset.

Carrots.—In gardens, the soil of which is infested with wireworms, it is advisable to sow only the Short Horn and other short-rooted Carrots, relying on these for supplies at all seasons, and sowing twice or thrice between the present date and July 15. A variety that I would recommend is Veitch's Scarlet Model. In order to deter the wireworm from injuring the roots, sow the seeds in the drills and cover them with sifted charred garden refuse three parts, and one part fresh soot, which should be well mixed together before using. If the soil is free from wireworm, the seeds of the maincrop of Carrots may now be sown. One of the best for this sowing is Sutton's New Red, and a few rows of Scarlet Model may also be sown. Sow thinly in shallow drills drawn at 15 inches apart, and 1 inch deep. Single out the plants of the early sowings of Short Horn varieties, and keep the ground well stirred with the Dutch-hoe in dry weather.

Seakale.—If at planting-time growth is forward enough thin the buds on each set to two, and when growth is more general reduce to one, the strongest, which will form the crown-bud for next season's forcing. Seakale planted in permanent beds should have the shoots reduced to one or two per plant, and not more than six crowns should exist in each clump, or the Seakale pots will not cover them, and for the same reason the crowns should be kept within a small compass. After thinning the shoots on plants in beds that have been forced, prick up the surface with a fork if this has not been already done; mulch with some well-rotted rich manure, and during showery weather a week or two hence apply liquid-manure copiously.

Radishes.—To have these roots crisp in texture and mild of flavour grow them quickly, applying water if the beds are much exposed to wind and sun. A cool border, preferably one facing the east, should be reserved for Radishes during the summer, and small sowings should be made weekly. Where frames on spent hotbeds can be spared, Radishes may be grown quickly without much attention, simply shading the frames till the plants are up, and afterwards from strong sunshine. The Olive-shaped varieties are those most liked, and for summer supplies, and for forcing I prefer the Foreing Carmine to any other.

Lettuce.—Thin the plants of the Cabbage-Lettuce sown broadcast on warm borders, as recommended in a former Calendar, affording a space of 6 inches from plant to plants of Commodore Nutt or any of that type, and 9 inches to Veitch's Perfect Gem. The thinnings, if planted at the edge of any well-dug plot or border, will succeed those that are left standing in the beds. Stir the soil with a Dutch-hoe where white and other

varieties of Cos are growing, and take care that the plants are not spoiled by being crowded together, but single them out whilst they are small, and a few weeks later thin the plants to about 15 inches apart, planting the thinnings on a piece of ground in good heart. Where the Celery-trenches are already thrown out, each alternate ridge may be planted with Cos Lettuces, in which positions they seldom fail to do well. Make another sowing forthwith of white Cos and Cabbage varieties.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Mulched Fruit-trees.—Let the mulch be removed from around all trees planted last autumn and the spring of this year, and the ground broken up slightly with a digging-fork, in order that the sunheat may penetrate it without hindrance, and act beneficially on the trees. When this practice is followed, the trees soon show a marked improvement, growing freely when a start is once made. Unless the month is very dry, no mulch need be applied before the end. When a fresh mulch is applied, it should be of a strawy kind; and before it is placed over the roots a copious application of water should be afforded if heavy rains have not fallen. Transplanted trees should not be allowed to bear much fruit, if any; and should be afforded water and overhead syringing in dry weather, trees against walls being afforded the latter twice or thrice a week.

The Gooseberry Sawfly.—An examination of the undersides of the leaves of the Gooseberry-bushes should now be made, and the larvæ, if any, collected and put into vessels containing freshly-slaked lime, and some of the same should be scattered beneath the bushes as far as the crowns extend; and follow up this with hand-picking every few days. Some gardeners employ Hellebore powder, also quassia water, into which soft-soap at the rate of 2 to 3 oz. per gallon is put to make it more adhesive. These remedies must be applied several times in succession, and are not of much use if the weather be rainy. Hand-picking is, in my opinion, the best means of lessening the numbers of this serious pest, and it should begin as soon as the caterpillars are hatched out.

General Remarks.—Rub off the young growths on the stocks of grafted trees, leaving only a few for the present to aid the ascent of sap to the scions, more particularly in the case of backward ones. These shoots may, when the scion is making headway, be reduced in number and in their length, and finally be removed with a knife close to the bark. The clay or wax may be removed betimes from grafts that have begun to grow freely, and the ligatures, if they are found to be indenting the bark, replaced with fresh ones put on less tightly. Recently planted fruit-trees on grass-land should be freed from the turf for a distance of $1\frac{1}{2}$ ft. all round the stems; and as regards the mulching of these trees, the directions given above will apply.

THE ORCHID HOUSES.

By W. P. BOUND, Gardener to J. COLMAN, Esq., Gatton Park, Reigate.

Cattleya House.—Plants of *C. gigas* and *C. Dowiana aurea* and the hybrid from these species, viz., *C. Hardyana*, having begun to grow, will require more water than heretofore as growth proceeds. These plants should be grown in a group altogether, so that more sunlight may be admitted to them than is good for the other inmates of the house. A fair amount of sunshine has a very good effect on the flowering of the plants. The time when they may be repotted varies considerably, the most suitable time being when new roots form at the base of the leads. The flowers on *C. Mendeli* and *C. Mossiae* are now fast developing, and the plants well furnished with roots should be afforded water freely till they go out of flower.

The time for repotting or top-dressing these *Cattleyas*, and it is a matter upon which success largely depends, is as soon as the young roots are visible on the lead; and in any case the plants should not be disturbed till the necessity to do so presents itself. Plants of *C. Schroderae* will soon be passing out of flower, and water should be carefully applied till they show signs of renewed activity, but on no account should they be allowed to become very dry. This charming species requires far more water when making its growth than any other *Cattleya* I know of; indeed, well rooted plants may be afforded water almost daily. Repotting should be carried out as advised for the other varieties, the potting compost consisting of three-fifths turfy-peat, one-fifth chopped sphagnum, one-fifth good leaf soil, the strength of the plant determining the quantity of drainage materials made use of. Plants which may have deteriorated should have the pots half-filled with these, whereas others which require to be merely potted-on will require much less. Plants of *Cattleya* should be so placed in the pots that the base is about on a level with the rim, the roots having a greater tendency to enter the compost when potted in this manner, than when it is raised in conical form, and the plant stuck on the top. Another advantage of this kind of potting is, that it does not entail nearly so much time in the doing. I would remind Orchid-cultivators of the necessity of dividing old specimen *Cattleyas* which indicate any deterioration, and cutting away the aged back pseudo-bulbs, and thus rejuvenating the plants before it is too late. It does not follow that because a specimen is pulled to pieces that it is lost, rather its life is saved, and all that is lost are the useless pseudo-bulbs and dead rhizomes. The leading growths are saved in every case, and they will soon show improvement in the production of stronger growths and finer flowers; but it is of importance to carry out the operation at the right time, that is as soon as the new roots begin to form on the leads.

PLANTS UNDER GLASS.

By J. C. TALLACK, Gardener to E. MILLER MUNDY, Esq., Shipley Hall, Derby.

Aphelandras.—The plants which will be the first to flower are beginning to reach the stage when repotting should be performed. The usual mixture for stove plants, namely, peat, loam, in equal ratio, and sand, will suit them. The root-mass or ball should be reduced in size considerably, so as to afford as much new soil as possible in the comparatively small pots in which they should be potted. *Aphelandras* may be raised from cuttings of shoots taken when about 2 inches long, and with a heel of old wood. The plants should be afforded a considerable amount of heat and humidity.

Richardias.—The earliest plants should now be afforded less water at the root, with the object of maturing the tubers at an early date. It has been found that a long rest induced by dryness of the soil, and when growing to place the plants always in full sunlight, are means whereby the disease, which is becoming prevalent in places where *Richardias* are largely grown, can best be combated.

R. Elliotiana and others of the yellow-spathed species, which should now be growing freely in a high temperature, may be frequently afforded liquid manure-water during the rather short period when the plant is making very active growth, which will give increased size to the tubers.

Freesias.—Where it is the practice to depend upon home-grown bulbs, the plants need careful treatment, water being afforded so long as the leaves retain their green colour, but cutting off the supply entirely when the leaves change colour, the plants meantime being placed on a sunny greenhouse shelf or other place, where they are exposed to full sunshine.

Kalosanthes.—Cuttings made from the strongest of the unflowered shoots should be put in to the number of three to five in small

pots, and being of a fleshy nature much water is not required before they have formed roots. It is advisable to let the cuttings get wilted by exposure to the air for a few hours before putting them into the cutting-pots. The cuttings strike readily in a dryish house or pit.

Francoas.—These should now be top-dressed with a mixture of sandy loam and leaf-mould, in order to encourage the formation of roots on the stem, and plants growing in 60's and small 48's may be shifted into somewhat larger pots if necessary.

Winter Carnations.—The first and principal stopping of these should now be carried out, if the main stem is sufficiently tall to admit of it. This is a matter that requires special knowledge of the varieties grown, but as a general rule it may be said that the best flowering-shoots spring from the main stem about 6 inches above the soil, and to stop some varieties lower than this is to court failure. Varieties of a free-branching habit require no stopping.

Thunbergias.—Seeds of *Thunbergia auran-tiaca* and other varieties may now be sown. The plants grow quickly, and make excellent subjects for planting in baskets to be hung in stoves where the air is kept so moist that red-spider cannot exist.

THE FLOWER GARDEN.

By R. DAVIDSON, Gardener to EARL CADOGAN, Culford Hall, Bury St. Edmunds.

Chrysanthemums.—For an autumn display, the ordinary early-flowering varieties are admirably suited, and have an excellent effect in groups of half-a-dozen or in large masses. The plants may with safety be set out at any time after this date. Let the stations be well manured and deeply dug, and see that the soil is made firm about the roots—a matter of importance, as if planted loosely, long, attenuated shoots will be the result. Unless the soil is very dry, or the weather at the time of planting abnormally warm, no water need be applied to the plants for a few days. As soon as growth recommences, pinch out the points of the shoots at about the sixth leaf; and if the soil be light, afford a mulching of well-rotted manure. During the summer months the plants require but little attention beyond keeping the soil free from weeds, staking and securing the shoots against the wind, and applying water abundantly in dry weather.

Pentstemons.—Some of the newer varieties possess exceedingly bright colours, large blooms, and a long season of flowering, which make them most useful plants in garden decoration. Any plants in stock which have been raised from cuttings or seed may now be planted on well dug soil in beds and borders, and afforded sufficient water to settle the soil around them.

Shrubby Phloxes should be planted forthwith in well-prepared beds or stations. The fine trusses of flowers produced by the dwarf varieties have such rich colours that very beautiful effects may be obtained from them when planted in beds of one colour, the beauty of the whole being greatly enhanced if the beds are on turf. The pure white *La Fiancée*, when planted in beds of moderate size, with specimen Cockscombs brought on in pots and planted out in July, or when the bloom of the *Phlox* is beginning to develop, in the proportion of two *Phloxes* to one Cockscomb, has a very pleasing and uncommon effect, and the flowering period of both is of considerable length. The shoots of *Phloxes*, when very many, should be reduced in number by taking out the weaker ones.

Herbaceous Borders.—Let the weak shoots of *Achilleas*, *Delphiniums*, *Lupins*, and *Sun-flowers* be removed in number according to the habits of the plants. Some of the plants that were lifted and re-arranged last autumn may require this kind of attention to a lesser extent. Extirpate all weeds, and keep straying and rampant-growing plants within proper bounds. If slugs abound, place a few fresh leaves of Cabbage near to infested

plants, examining these baits every morning and late in the evening, destroying all that are found on or beneath them. If this practice be followed up for a few weeks, the numbers of these depredators will be greatly lessened.

FRUITS UNDER GLASS.

By JAMES WHYTOCK, Gardener to the DUKE OF BUCCLEUCH, Dalkeith.

The Melon House.—The earliest Melon-plants should be afforded water in sufficient quantity, but the soil round about the stems for a space of 1 square foot should not be wetted. If the quantity of soil in the ridge or bed is small, and the roots have come through to the surface, add a small quantity of heavy loam, but no solid manure, weak manure-water being used instead if very large fruits are required. Light soils may be sprinkled with fish-manure, or other phosphatic manure, before the soil is added. Keep the air moist by often damping down paths, &c., and slightly dew over the plants at closing time. The shoot which carries a fruit should be stopped two leaves beyond it, and as much bine allowed to grow as will cover the trellis with foliage, but no more, and be kept clean and healthy. The night temperature should not exceed 70°, but at closing time in bright weather the warmth may reach 90°. When the fruits begin to ripen afford much less water, but do not cause the leaves to flag. Put out more Melon-plants, doing this whilst they are quite small, and keep the soil rather dry till the plants have gained strength. Continue to sow seed for planting in frames and pits that will be cleared of bedding plants shortly.

Early Cucumber plants usually show when in full vigour too many fruits, and the number of these must be reduced considerably, or they will be of small size, and the cropping capabilities of the plants reduced in a short space of time. The plants require much water at the root in hot weather and should be grown on porous soil over good drainage; weak manure-water being used alternately with clean water, and the plants syringed night and morning. At the same time the air must be kept moist by an occasional damping of the paths and walls. The day temperature may be 80° in sunny weather, 70° to 75° in dull weather, and 65° at night. It is better practice to raise a few Cucumber plants from seed every six weeks, and make up new beds, than to tinker with exhausted plants, in the hope of prolonging their fruitfulness. Cucumbers grow very well in the summer months in ordinary garden frames, if these be half filled with stable-dung alone or mixed with tree-leaves, taking care that the heat goes off, the soil of the bed consisting of coarsely chopped up loamy soil and rotten dung.

PUBLICATIONS RECEIVED.—*Annales Agronomiques*, March 25. Principal contents: Composition des Blés durs, M. E. Fleurent; Nodosités radicales chez les légumineuses, M. E. Laurent; Culture du Riz au Japon, M. Main; &c.—*Bulletin de la Société Botanique de France*, tome 49. Contains reports of the meetings and of papers read by the members.—*Gartenflora*, April 1.—*Bullettino della R. Società Toscana di Orticultura*, March.—*Nuovo Giornale Botanico Italiano*, January.—*Bullettino della Società Botanica Italiana*, January.—*Boletín del Instituto Físico-Geográfico de Costa Rica*, No. 13.—*Harrison's Horticultural Advertiser of America*, March 17 (La Motte, Pa., U.S.A.).—*Proceedings of the American Academy of Arts and Sciences*, March. Contributions from the Gray Herbarium of Harvard University, by M. L. Fernald. 1. The North-eastern Carices. II. The Variation of some Boreal Carices, with five plates.—From the New York Agricultural Experiment Station, Geneva: *Bulletins* No. 201. *Report of Analyses of Commercial Fertilisers for the Spring and Fall of 1901*, by L. L. Van Slyke and W. H. Andrews; No. 202. *San José Scale Investigations*, by V. H. Lowe and P. J. Parrott; No. 204. *Report of Analyses of Paris Green and other Insecticides in 1901*, by L. L. Van Slyke and W. H. Andrews; No. 205. *Influence of Manure upon Sugar Beets*, by W. H. Jordan and G. W. Churchill; and No. 206. *Commercial Fertilisers for Ontario*, by W. H. Jordan and E. A. Silliman.—*Cassell's Dictionary of Gardening*, part 12.—*Journal of the Department of Agriculture of Western Australia*, vol. 5, part 3.—*The Agricultural Gazette of New South Wales*, March, 1902.—*Practical Botany for Beginners*, by Bower & Gwynne Vaughan (Macmillan, London).—*Cyclopedia of American Horticulture*, by L. B. Bailey, R.-Z. (Macmillan, London).—*Report of the Nova Scotia School of Horticulture*, By Prof. F. C. Sears, Wolfville, N.S.

APPOINTMENTS FOR THE ENSUING WEEK.

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| SUNDAY, | MAY 4 | {Chambre Syndicale des Hort. Belges, Meeting, at Ghent. |
| TUESDAY, | MAY 6 | {Royal Horticultural Society's Committee Meel. Scottish Horticultural Association's Meeting. |
| WEDNESDAY, | MAY 7 | {Royal Caledonian Horticultural Society's Show (two days). |
| THURSDAY, | MAY 8 | {Royal Gardeners' Orphan Fund, Annual Dinner at the Hotel Cecil, at 6.30 P.M. for 7 P.M. |

SALES FOR THE WEEK.

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| TUESDAY, MAY 6— | At the Hale Farm Nurseries, Feltham, Middlesex, Carnations, Chrysanthemums, Phloxes, Peotstemons, Begonias, Dahlias, Bedding Plants, Cannas, Irises, and other plants, by Protheroe & Morris. |
| WEDNESDAY, MAY 7— | Palms, Sweet Bays, &c., at Stevens' Rooms.—Palms, Liliums, Ferns, &c., at 67 & 68, Cheapside, E.C. by Protheroe & Morris, at 12.—Specimen and other Palms, &c., at Granard Gardens, Putney Park Lane, Putney, by Protheroe & Morris, at 12.30. |
| THURSDAY, MAY 8— | Specimen and other Palms &c., at Granard Gardens, Putney Park Lane, Putney, by Protheroe & Morris, at 12.30. |
| FRIDAY, MAY 9— | Orchids in variety 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 —52.5°.

ACTUAL TEMPERATURES:—

LONDON.—April 30 (6 P.M.): Max. 58°; Min. 48°.
Wind, West, Moderate.

PROVINCES.—April 30 (6 P.M.): Max. 52°, S. Shields, Scilly, and elsewhere; Min. 47°, Peterhead.

Grain, Flour, and Meal of British Commerce.

IN an article anticipating the new Budget in the *Gardeners' Chronicle* for March 22 last, we referred to the important part played by the vegetable kingdom in the realisation of the revenue of the country. This has been singularly confirmed in the Chancellor's new proposals for meeting the expenses of the South African War, for, in addition to the advanced Income-tax and the Cheque-duty, that which is comprised under the Corn and Flour-tax deals exclusively with vegetable products, though of so varied a character as to suggest an article on the curiosities of taxation, for one cannot conceive that anyone except a Chancellor of the Exchequer could possibly make the term "grain" so elastic as to include such products as Peas, Haricots and other Beans, Lentils, and Locust or Carob-beans. Again, the term "flour" or "meal," as interpreted by the Customs authorities, is made to include Pea or Bean-meal, starch or farina from Potatoes, arrowroot, Mandioca, and Cassava-flour, tapioca, and sago, so that there is a wide scope of materials for the purposes of taxation.

In respect to this curious classification, several questions have been asked in the House of Commons by those members who apparently know that a Potato or a Locust-bean would not be called grain by ordinary mortals, although for the purpose of revenue they may be so considered. However strained the meaning may be, all such articles are liable to the duty of threepence per cwt. for "grain" and fivepence per cwt. for "flour" and "meal."

The absurdity of this classification will be made more clear by a further consideration of the plants yielding Locust or Carob-beans, tapioca, sago, and arrowroot.

The first is a small branching tree, about thirty feet high, belonging to the natural order Leguminosæ, and a native of the

European, African, and Asiatic countries bordering the Mediterranean. It is also cultivated especially in districts which suffer from drought, as from the long, penetrating roots of the tree, it has the power of resisting extreme drought. The pods, which vary in length from four to eight inches, and from one to one-and-a-half inch wide, are, when ripe and dried, of a shiny brown colour, filled with a very sweet pulp, which encloses numerous small brown seeds. The saccharine pulp, which also has a mucilaginous taste, causes the pods to be much in demand for feeding horses, mules, pigs, &c., and in times of scarcity they are used for human food. Of late years these pods have become a large and increasing article of import into this country, chiefly for the purpose of feeding cattle, entering as they do largely into the patented cattle foods which have become so generally adopted of late. At one time the pulp of these pods was considered an excellent remedy for sore throats, and it was also used by singers for the purpose of clearing their voice. In Cyprus, a black syrupy substance like treacle, and known as Carob honey, is prepared from it. The term Carob is derived from the Arab *Kharous*, while that of locust-pods, by which they are more generally known in commerce, is from the supposition that they formed the food under the name of locust, upon which St. John the Baptist fed while in the Wilderness. A third name frequently given to these pods, namely that of St. John's Bread, has the same derivation. The crooked warted branches when straightened, form excellent walking-sticks, and are imported into this country for the purpose.

The plants furnishing tapioca, Cassava meal, and Mandioca flour, are perennials of a half shrubby or herbaceous character, producing large cylindrical fleshy roots, containing a quantity of milky juice. Two species are used: the chief or most important being known as the bitter Cassava (*Manihot utilisima*), an Euphorbiaceous plant having a bitter poisonous juice, and the other known as the sweet Cassava (*M. Aipi* or *M. palmata*), the sweet juice of which has no poisonous properties. Both species are supposed to be of South American, and specially Brazilian origin.

The poisonous species is that which is mostly cultivated for the purposes of food, and at the present time it is largely grown throughout the tropics, particularly in South America, West tropical Africa, the Straits Settlements, and in various parts of India. With a plant so widely cultivated, as might be expected, a large number of varieties have arisen. *M. utilisima* is much more productive and much more largely cultivated than *M. Aipi*, this latter species being grown chiefly for the sake of the roots which are simply boiled and eaten as a vegetable, and though yielding Cassava meal, Cassava starch, and tapioca, its cultivation in comparison with the other species is comparatively small. The poisonous bitter juice which *M. utilisima* contains is removed by expression, and the heat used in the preparation of Cassava meal and tapioca dissipates the remaining bitter principle (hydrocyanic acid).

When freed from starch and concentrated by boiling, this juice becomes a thick black fluid known as Cassareep, which is much

used in the West Indies in the preparation of made dishes. It is imported into this country, and is used as the basis of many well-known table sauces. Cassava starch, Mandioca flour, and tapioca are all preparations obtained from the grated and washed roots of the *Manihot*, tapioca itself being simply Cassava starch which, while moist, has been heated on hot plates. Under this treatment the starch granules swell and burst, and become agglomerated in the small irregular masses as seen in the shops.

Tapioca is a cheap but valuable article of food so far as its dietetic properties are concerned, as it is nutritious and easily digested.

Arrowroot is another root product, as its commercial name implies, and consists of the starch obtained by a series of careful washings of the grated root of *Maranta arundinacea*, a Scitamineous plant of the West Indies. The substance is one of the most easily digested foods of the farinaceous series, and is much used for invalids. It varies considerably in price, according to quality and place of production. Many years ago St. Vincent was the principal place of production, the quality being the best in the English market. At the present time Bermuda produces the finest quality, which is sold in the retail market at 2s. per lb., against 5d. for St. Vincent and 9d. for that from Natal. At the Mining Lane Sale Room a week ago, Bermuda arrowroot was bought in at 1s. 5d. per lb., while fine St. Vincent's sold at a little over 3d. per lb.

Sago is perhaps more generally used as an article of food than either of the preceding, as the term has a wider application, being given to similar products from several distinct plants, as, for instance, from some species of Cycadæ, from which fact this group of plants was formerly known as Sago Palms. *Cycas revoluta* in China and Japan, *C. Rumphii*, *C. circinalis*, and *C. pectinata* in India; *C. media* and *Macrozamia spiralis* in Australia; and *Zamia integrifolia* in the West Indies, all furnish a kind of meal or starch from which a kind of sago is made, as does also *Phoenix farinifera*, a shrubby Indian Palm. Commercial sago is, however, obtained from the trunks of *Metroxylon sagu* and *Arenga saccharifera*. The former Palm is much the more important, and is abundant in Sumatra and the neighbouring islands, as well as in Java, Malacca, Siam, Borneo, and Celebes. The life of this Palm is said seldom to last longer than from fifteen to twenty years, when the tree flowers and dies. An enormous number of flowers are produced, but comparatively few fruits are formed, and a still less number of seeds are perfected. The quantity of commercial sago obtainable from one tree of this species is enormous, averaging up to 500 or 600 lb., and it is recorded that as much as 800 lb. have been derived from a single tree. It has been further estimated that these sago Palms of average size will yield more food than an acre of Wheat, and six trees more than an acre of Potatoes. To obtain the sago-meal the trunk is cut down and split up into longitudinal segments, the cellular or pith-like centre is scraped out and carefully washed, the water in settling deposits the starch, which is moistened into a pasty-like mass, and pressed through sieves of different sized meshes, thus pro-

ducing the granules so familiar to us as commercial sago. These granules are, of course, completely dried before being packed for export. The importance of sago-meal as an article of food in the Moluccas has been exemplified by the statement that $2\frac{1}{2}$ lb. of bread made of this meal is sufficient for a day's sustenance for a healthy man employed on hard work.

From the foregoing remarks it will be seen that the terms "grain," "flour," and "meal," as interpreted by the Chancellor of the Exchequer, have an extremely wide range.

ROYAL HORTICULTURAL SOCIETY.—The Royal Horticultural Society will hold their great Annual flower show in the Inner Temple Gardens (by the kind permission of the Treasurer and Benchers), on May 28, 29, and 30. For schedule of this show, application should be made to the Secretary, Royal Horticultural Society, 117, Victoria Street, London, S.W., enclosing a stamp.

—The next meeting of the Fruit and Floral Committees will take place on Tuesday, May 6, in the Drill Hall, Buckingham Gate, S.W., from 1 to 5 P.M. A lecture on "The Classification of Plants by Evolution" will be given by the Rev. Prof. G. HENSLOW, M.A., V.M.H., at 3 o'clock.

—At a general meeting of the Society, held on Tuesday, April 22, fifty-two new Fellows were elected, amongst them being Lord Decies, the Earl of Mount Edgcumbe, Viscount Peel, Sir Wm. Johnson, Bart., Sir Arthur Lawson, Bart., Sir Chas. Wolseley, Bart., and Lady Drummond of Hawthornden, making a total of 452 elected since the beginning of the present year.

SALE OF ORCHIDS.—Messrs. PROTHEROE & MORRIS, sold lately at the Central Auction rooms, 67 and 68, Cheapside, E.C., a collection of established Orchids. Some of the lots realised very high prices, among which may be mentioned the following:—*Odontoglossum crispum*, two old bulbs, and two leaf bulbs, strong plant, a superb variety, finely blotched and spotted on sepals and petals, grand lip, 150 guineas; ditto, two old bulbs, and two leaf bulbs, fine plant, very dark claret spots on sepals and petals, 60 guineas; *O. c. roseum*, very good plant, fine flower, and densely spotted petals, with minute spots, 50 guineas.

THE NATIONAL ROSE SOCIETY has issued its schedules of prizes to be offered at the three exhibitions that will be held under its auspices in the approaching season. The first of these will take place, as last year, in the Inner Temple gardens, Thames Embankment, London, on July 2. Notice of entry should be made not later than June 27, to the Hon. Sec., National Rose Society, 2, Clifton Gardens, Chiswick. The second will be held in conjunction with the annual show of the Devon and Exeter Horticultural Society, at Exeter, on July 4. Entries must be addressed to 17, Bedford Circus, Exeter, not later than June 30. The latest, or northern show, will be in the Royal Botanical Gardens, Manchester, in conjunction with the show of the Royal Botanical and Horticultural Society of Manchester, on July 19. Entries are requested to be sent to the Hon. Sec., National Rose Society, Royal Botanical Gardens, Manchester, not later than July 15. It should be remembered that Hybrid Teas are considered as Hybrid Perpetuals unless specially excluded by the schedule, and may not be shown in the classes for Teas and Noisettes.

CYDONIAS.—From Mr. ANTHONY WATERER'S nursery at Knaphill we have received some very beautiful seedling varieties of Cydonia, amongst which, one named Knaphill Scarlet, with bright scarlet flowers, $2\frac{1}{2}$ inches across, is the best.

HORTICULTURAL CLUB.—The usual monthly dinner will take place on Tuesday, May 6, at 6 P.M., at the Hotel Windsor, Victoria Street, when the Rev. GEORGE H. ENGLEHEART, V.M.H., has kindly promised a paper entitled "A Talk about Daffodils."

A GARDENER J.P.—May it not be regarded as a new event in a gardener's experience to find that an estimable colleague and gardener, Mr. JOHN DEAN, who is head gardener to the well-known public schools at Sherborne, Dorsetshire, of which that liberal-minded and able clergyman, Canon WESTCOTT, is Head Master, has recently been elected to the office of Chairman of the Sherborne Urban Council, and by virtue of that position he also for the time being becomes a magistrate? Mr. DEAN has for several years been Chairman of the Sherborne Gardeners' Mutual Improvement Association.

THE DUDLEY HORTICULTURAL SOCIETY, according to a schedule before us, will hold its first exhibition and honey show on August 13 and 14. A considerable number of classes is reserved for the encouragement of gardening within a radius of four miles of Dudley, but in addition to these there are open classes for plants and cut flowers. In the two principal classes for a group of miscellaneous plants, and for twenty stove or greenhouse plants, first prizes of £10 each are offered. The Secretary is Mr. H. DICKINSON, Sunnyside, Dudley. The town itself is situated almost in the centre of a district popularly termed the "Black Country."

A CENSUS OF GARDENERS, NURSERYMEN, SEEDSMEN, AND FLORISTS, WITHIN THE ADMINISTRATIVE COUNTY OF LANCASTER.—The number of persons enumerated at the census of March 31, last year, within this area reached a total of 6,609. In addition to this total there were 346 females so enumerated. These totals are distributed under the following range of ages:—

| Ages. | Males. | Females. | Ages. | Males. | Females. |
|-------|--------|----------|----------------|--------|----------|
| 10 | 65 | 3 | 45 | 1,141 | 31 |
| 14 | 99 | 7 | 55 | 886 | 26 |
| 15 | 634 | 90 | 65 | 575 | 16 |
| 20 | 630 | 81 | 75 and upwards | 141 | — |
| 25 | 1,215 | 54 | | | |
| 35 | 1,117 | 38 | | | |
| | | Totals | | 6,609 | 346 |

Domestic gardeners, it should be noted, are not included in the above totals. Two blind and one deaf-and-dumb gardeners appear in the table of infirmities.

WILSON BLUE PRIMROSES.—A very bright bed of these beautiful spring flowers in the garden of Dr. A. H. WILLIAMS, Rotorna, Harrow-on-the-Hill, which were raised by him from seed, calls to mind the enthusiasm of their originator, that genial amateur florist, the late G. F. WILSON, of Heatherbank, Weybridge, when speaking of his first successes in fixing the blue colour in garden Primroses, and his determination to continue until he had so established the strain that it should come true from seeds. In view of the variability of the flowers of Primulas in the matter of colour, few persons thought Mr. WILSON'S hopes would be realised to such a degree as we now know was accomplished, for many persons have raised these blue Primroses true from seeds. In Dr. WILLIAMS' batch all the set originally sent out appear true to their original characters, and in point of bright

blue colour and size of flower, his plants seem to be improvements. A bed of mixed alpine Auriculas is also very pretty and fragrant, and the Bunch Primroses, as they are often called, very effective.

NARCISSUS LEEDSII "ELAINE."—Flowers of this exceedingly delicately tinted variety, raised by the Rev. G. H. ENGLEHEART, are sent us by Messrs. DICKSONS, Ltd., Chester, who inform us that they will distribute it in 1903. The flowers have a sulphur-white coloured perianth and lemon cup.

LOBELIA NEWPORT'S MODEL.—We have received from Mr. W. R. NEWPORT, Hillingdon Heath Nurseries, Uxbridge, a specimen of this bedding Lobelia. The flowers are of bright purple colour, with a large, conspicuous white eye.

THE JAPANESE MAPLES.—From Messrs. T. CRIPPS & SON have come specimens of some of the choicest varieties of these very effective foliage plants. These include two forms of *Acer japonicum*, namely, aureum and laciniatum. All the others are varieties of *A. palmatum*, representing in the main colour variations from the type, and as in dissectum and septemlobum, variations in the form of leaf also.

"KEW BULLETIN OF MISCELLANEOUS INFORMATION."—We note that Appendix IV., 1902, of the *Bulletin of Miscellaneous Information* from the Royal Gardens, Kew, is devoted to the annually-published list of the members of the staffs in botanical departments at home, and in India and the Colonies. This will be of much use for reference for intending correspondents in the various stations and elsewhere.

"THE HOMELAND HANDBOOKS."—The last addition to this series of pleasant guides deals with Epsom and the Epsom district, and is written and illustrated by GORDON HOME. The introduction appended to it has been attributed to Lord ROSEBERY, having been first published over the initials "A. R." This handbook is, like its forerunners, fully illustrated, and includes a map copied from the ordnance survey. The chapters deal with such subjects as the position of Epsom, and description of the Town and District in Past and Present Times, the Churches, Great Houses, Local Worthies, the Origin of the Racing on the Downs, the Country beyond the Town, Birds of the District, Golf, and similar items of local interest. This Guide to Epsom is published by the Homeland Association, 24, Bride Lane, Fleet Street, E.C.

DISEASES OF CHINA ASTERS.—A bulletin recently issued from the Massachusetts Agricultural College on growing China Asters, contains many helpful hints, notably concerning the diseases to which these popular and useful plants are liable. The writer, Mr. RALPH E. SMITH, says in his summary that "The very prevalent trouble in growing China Asters is due to a variety of causes. These are, principally, a stem-rot disease or wilt caused by a fungus; a peculiar abnormal growth, the cause of which is not definitely known; and lice on the roots. Other troubles occur, but they are more obvious or not generally destructive. The stem-rot disease is characterised by a wilting and final dying of affected plants, accompanied by a discoloration and rotting of the stem just at the surface of the ground." The remedy for this disease appears to be the planting of the seeds in good soil, and care in thinning and transplanting. "The yellow disease appears as a spindling yellow growth of the branches and leaves, and a

peculiar abnormal development of the flowers. It seems to be due to a failure in the metabolism in the leaves. Plants affected with root-lice fail to grow, and finally wilt and die. The roots are found to be covered with masses of small bluish-coloured plant-lice." Here again the use of new and unfested soil appears to be the only remedy. The stem-rot or wilt, although just showing itself at any time during the plant's growth, appears to be contracted only in the seed-bed or pricking-out flats. Both this disease and the root-lice may be avoided by proper methods of cultivation. For the yellow disease no treatment is known; none of these troubles can be remedied after they have once appeared." Asters are also affected by a true rust of the leaves, by grubs which eat the roots, and by insects which eat the leaves and flowers; and for these pests, hand-picking is the best remedy. Mr. SMITH makes no mention of the Aster-worm described and figured in our columns on Aug. 19, 1897, p. 98.

"ONE-AND-ALL GARDENING."—The seventh issue is before us of this "popular annual for amateurs, allotment holders, and working gardeners," and we recommend all persons who come under this category to consult it when they need advice. The present number, for 1902, includes articles on the Rose, by Mr. T. W. SANDERS; the Culture of Peas, by Mr. HORACE WRIGHT; and the Potato, by Mr. S. DICKS. There are many shorter notes and papers, and plenty of illustrations. The Annual is sent out by the One-and-All Agricultural and Horticultural Association, 92, Long Acre, W.C., whose other publications, and whose seeds and sundries may be known to our readers.

THE LOWEST TEMPERATURE.—According to a statement cited in *Nature*, the lowest temperature anywhere observed on the globe is -90° F. at Werkojansk, Arctic Siberia, at a height of 460 feet, lat. $67^{\circ} 34' N.$, long. $133^{\circ} 51'$, $=122^{\circ}$ of frost!

THE HIGHGATE AND DISTRICT CHRYSANTHEMUM SOCIETY'S Annual Report and Schedule of Prizes to be offered for competition in 1902, shows that arrangements have been made for holding a large exhibition in the Alexandra Palace on October 29, 30, and 31. The principal classes include those for a floral display of Chrysanthemums, for twelve vases of Japanese Chrysanthemum blooms, six vases of incurved blooms; an extraordinary number of special prizes are offered in various classes. The secretary is Mr. W. E. BOYCE, 20, Holmesdale Road, Highgate.

THE HANDSWORTH (STAFFS) HORTICULTURAL SOCIETY'S REPORT contains a schedule of prizes offered for competition at the forthcoming show to be held on July 25 and 26 in the Victoria Park. There are classes for most plants, flowers, fruits, and vegetables in season at the date of the exhibition; and the prizes offered in the open classes are of a liberal character. The Society, however, avows its special object to be "to encourage the better cultivation of flowers, plants, fruits, vegetables, and gardening generally," in its own district, consequently the major number of classes is reserved for local cultivators. The Secretary is Mr. JNO. EDWARDS, 24, Stafford Road, Handsworth.

ENQUIRY.

ALPINES.—Can anyone say where good plants of *Dianthus calzonius* or *Omphalodes luciliae* are to be had. X. Y. Z.

HOME CORRESPONDENCE.

ROSE NAMES.—Rose *Félicité-Perpétue*. It may be of interest to cite the following extract:—As a matter of fact, *Perpétue* and *Félicité* are two celebrated Christian women of antiquity, filling a glorious page in ecclesiastical history; two saints, almost inseparable, who together suffered martyrdom for the faith at the beginning of the third century of the Christian Era. They were bound up in the closest friendship; they were arrested and imprisoned at the same time, and subsequently (203 A.D.) were thrown to wild beasts in the amphitheatre at Carthage, and together received the palm of martyrdom. This is why the Roman Catholic Church also never separates them, but annually does honour to their memory on the same day, and everywhere, as in the list of martyrs, in the breviary, &c., the two names are found united. For these reasons and in consideration of the views above expressed, we think we may formulate our deliberate opinion in maintaining that it is highly probable, not to say certain, that the original name of the Rose in question, dating from 1827, was *Félicité-Perpétue*; *Perpétue* with a capital P and joined to *Félicité* by a hyphen, or else *Félicité et Perpétue*. Then this Rose's name is intelligible enough. The pious intention of its raiser, M. Jacques, gardener to Louis Philippe, who was subsequently King of France, undoubtedly was to dedicate his Rose to these two celebrated saints, so closely united in life and death. And the Rose itself, if we consider its qualities—the evergreen hush with white flesh-tinted flowers, was perfectly suited to this dedication; the white typifying the innocence of these two Christian heroines; the flesh-tint their martyrdom, and the evergreen leaves their immortality. *Ketten Frères, Luxembourg* (in the *Journal des Roses* for October), translated in *The Garden*, Oct. 22, 1887, M.

Gruss an Teplitz.—This Rose was originally sent out by M. Lambert of Trèves, under the above name. The name is often written *aus Teplitz*. It does not much matter to rosarians whether we consider the greeting as made to, or as coming from the town, but as a matter of historical record it is well to be accurate. Moreover, in this case, *Gruss an Teplitz* has undoubted rights of priority. *Nabonnand* and *Nabonnaud* are continually interchanged, which is not wonderful considering how like the letters "n" and "u" are both in manuscript and in type. Neither is it very much to be wondered at that "*Marquise de Salisbury*" gets perverted into *Marquis of Salisbury*. A. P.

—The statement in a recent *Gardeners' Chronicle* (p. 260) that the Rose name "*Gruss an Teplitz*" is wrong—is itself a mistake. The name *Gruss an Teplitz* is perfectly correct. The Rose was raised by Mr. Geschind, who had previously lived in Teplitz, and because he had a happy recollection of that place, he named the Rose "*Greeting to Teplitz*." *Gruss an Teplitz* would, of course, have meant "*Greeting from Teplitz*." *Gruss an Pallien* is an example of a similar appellation. I have obtained the opinion of Mr. P. Lambert, of Trier, who distributed *Gruss an Teplitz*, and who says "Mr. Geschind gave it the very proper name, *Gruss an Teplitz*." *George Paul*.

SAUROMATUM GUTTATUM.—I was interested on seeing the article on p. 261 concerning this plant, and also Mr. Jones' communication, as I have in my possession a tuber, bought last December from a local nurseryman as a "*Monarch of the East*." Since then it has been on a table, in a temperature anywhere from the freezing-point to 80° F. It remained dormant for what seemed quite a long time, until at last a shoot appeared, which grew rapidly for a time, and at about 3 inches high this shoot suddenly stopped, as if checked, and it afterwards withered. However, a second shoot was not long in developing, which has now attained a height of 7 inches; the sheath is now unfolding, so I am now

looking out for the spike. The bulbs were retailed at 1s. and 1s. 3d. each, and instructions given with them to the effect that they would flower successfully if placed on a table, or anywhere out of the way; after flowering, plant out, when leaves will be produced. F. W. Jeffery, *Malvern, April 22*.

—I may add to the notices of this old plant appearing at pp. 261, 263, of the *Gard. Chron.*, that it is quite hardy. I have had it here out-of-doors for at least twenty years. E., *Bitton Vicarage, Bristol*.

A BIG CATILLAC PEAR-TREE.—There stands in the gardens at Park Lodge, Blackheath, the residence of Mr. A. W. Ballance, a Pear-tree of the variety *Catillac*, in full bloom at the present time. The tree is growing in the middle of the meadow fronting the house, and it is 40 feet wide and 60 feet high. Last year, thirty bushels of fruit were gathered from this tree, and the promise this year is a good one. *Alexander Fraser, Park Lodge Gardens*.

SWEET PEA "MONT BLANC."—This white flowered Sweet Pea is not only one of the earliest to flower, but excellent for growing in pots; and sown at the same time as other varieties, it opens its flowers several weeks before them. The haulm is about 3ft. in height, that is about half that of ordinary Sweet Peas, and it is less robust than the newer varieties, but flowers freely, and is not injured or made taller by gentle forcing. We want more of these dwarf varieties. T. H. Slade.

EMBOTHRIUM COCCINEUM, ETC.—I observed, when visiting Mr. C. A. V. Conybeare's gardens at Tregulow, Cornwall, that the plants of *Embothrium coccineum* threw up suckers in the same manner as Elms, but less freely. Many plants have been raised at Tregulow from these suckers. Mr. Payne, the head gardener, informed me amongst the many bushes of *Embothrium* growing there, only one has, so far, borne seed-vessels. These bushes will be a fine sight in about a month, with their bright red, coral-like flowers. The bushes measure from 12 to 20 feet high, and are well furnished with flowers down to the ground. Will some correspondent kindly say if it is a common occurrence for this plant to send up suckers? *Rhododendrons* and *Camellias* are now in full bloom down in Cornwall and South Devon, many of them being crosses of *R. hybridum* with *R. arboreum*. Flowering trees and shrubs are numerous at Tregulow, and they grow with great vigour. I was surprised to find a plant of *Andromeda floribunda* growing in the open air, bearing hundreds of well-ripened seed vessels. The Conifers are largely represented, and among them many rare species. Some of the trees are of fine proportions. *Matt. Nicholls, Redruth*.

SPONTANEOUS SEEDLING NARCISSI.—Mr. Burbridge's note on spontaneous seedling *Narcissi* is of much interest, and will no doubt lead to closer observation, and consequently to an increase in the authentic records of varieties of *Narcissus* spreading themselves by seed, and also intercrossing. In the Wicklow garden to which he refers, there are many interesting seedlings, and some of them are undoubtedly of hybrid origin. The very pretty and graceful white variety mentioned by Mr. Burbridge, a cross between *N. nanus* and *N. cernuus*, is called *Rosa*. There is also a fine bold flower, in shape like *N. Horsfieldi*, but almost as white as a good *cernuus*—a spontaneous cross between *N. cernuus* and *N. bicolor*—which flowers much later than most of the others, except *bicolor*. This is called *Marie*. One of the secrets of these seedlings appearing in this Wicklow garden is the fact that it has always been tended by a lady who loves it, who weeds it herself by hand, and who never allows a scuffle-hoe to be used amongst her pets. F. W. Moore.

THE SHREWSBURY GRAPE PRIZES.—I may tell "D. B." the only thing I have "lost heart in is the hope of ever getting the chance

of competing in Scotland for a similar prize to that which will be offered at Shrewsbury," but perhaps if the competition results in favour of a grower in Scotland, "D.B." may yet take courage, and start the Cup he was so keen about some three years ago, to be competed for in the Waverley Market, Edinburgh, under the same impartial conditions as the Shrewsbury prize. Respecting the London and grouse seasons, I may add that it is common knowledge that the majority of gardens in the south are limited in space, and all the structures, including vineries, are crammed with plants, French Beans, Strawberries, &c., to serve the London season. One's time is fully occupied growing and packing produce for transit up to the middle or end of July, whereas our northern friends are mostly at leisure until

have grown it for many years. The error seems to have originated in some of the older works, like Loudon's Encyclopædia. The typical *P. capitatum* has anything but an agreeable perfume, but there is a variety of it which smells like Roses. I grow both plants. The typical *P. radula* is devoid of scent, it is the var. *rosodora* that is fragrant. I can supply living specimens of all the plants. *M. Buysmann, Middleburg, Holland.*

GLOXINIAS.—I am able to bear out all Mr. Westlake says regarding Gloxinias being moisture-loving plants. I have grown them with forty to forty-five flowers on each plant. I employed a light soil, potted lightly, afforded copious applications of water by means of a coarse rose water-can in the early morning,

can vouch for the ease and readiness with which the seedlings are obtained; indeed, at one time I had some hundreds of these seedlings, which were obtained from one or two seed-capsules. Their chief value is in preceding the garden Auricula in flowering, and from a decorative point rather than an individual merit in the flower these cross-bred kinds are very welcome. It is to be hoped that some one will take them up and raise seedlings again freely. By crossing the seedlings so raised, we almost get back again to the Auricula parent in at least a few instances. *E. Jenkins.*

DAFFODILS AND TULIPS AT LONG DITTON.

WHEN Messrs. Barr & Sons' collection of Narcissus was in bloom recently, thousands of folk hurrying along the London & South Western railway line were attracted by the breadths of flower. But as they lavishly bestowed their praise, few would know or perhaps care how the great variation in colour and form, which distinguishes present-day collections, has been brought about by the assiduous care and skill of a few cultivators, who, following Dean Herbert, have been able in a large measure to use Nature's methods as means to fulfil their own purposes.

The modern gardener knows that the "Golden Daffodil" is not always so golden-coloured as it had used to be, for the reason that efforts have been made to break that monotony by persistent cross-fertilisation.

When we admired the display made ten days ago, we knew also that the results of that cross-fertilisation were only imperfectly apparent in those breadths of bloom, for whilst the work is still going on and will be continued, certain results that have been already registered in these pages and at exhibitions, have not yet affected the general picture. In years to come, and it may require many, there will be large beds of such varieties as the new white trumpet Peter Barr, also of the rich yellow-flowered King Alfred, of Victoria, Queen Christina, Weardale Perfection, Sentinel, and others that at present are recognised to be valuable acquisitions, but must be sought in the lath-made, roofless houses or shelters, that protect the rarest and newest of the varieties in Messrs. Barr's collection. If some of these novelties will not be obtainable for years to come, they yet have the interest for those who follow the development of the flower closely.

Peter Barr is not the only white "Ajax," or large trumpet variety, that has been raised, but it is certainly the best, and much the best. Our illustration has been prepared from a sketch made by Mr. Worthington G. Smith of a flower shown at the last meeting of the Royal Horticultural Society. There was still one flower open at the nursery when, a day or two later, we visited Ditton. The dozen plants or so that at present constitute the entire stock, seem to show the variety possesses a satisfactory constitution, a point of some importance. The flower is depicted very clearly in the illustration (fig. 91), and its large perianth and finely developed trumpet with recurving ring, will be observed. In colour the flower is described as white, but it must be understood that by this is not meant the pure white that is seen in *Narcissus poeticus*. No trumpet Daffodil is yet so pure, but Peter Barr is the very palest sulphur-white, the perianth a shade purer than the trumpet, and the whole whiter than any existing Ajax variety. It is said to have been raised from Monarch and Mme. de Graaf, and will be a fitting memorial of a man whose life has been spent in developing and popularising the



FIG. 91.—WHITE TRUMPET DAFFODIL "PETER BARR."

the grouse season, and have every opportunity to give special attention to a special subject. There are some Scottish gardens in which plants are never put in a vinery. Therefore I think it just as reasonable for a strong man to boast of knocking a weak man down, as for our northern friends to boast of their superior Grape-growing abilities. "D.B." offers various opinions on the pointing system, but I note that the Royal Horticultural Society's code is to be employed at Shrewsbury, which decides that business. Personally, I do not (neither do I think Mr. Kirk will) thank "D.B." for bestowing his shadowy titles upon us, for they are like bubbles, easily pricked, leaving us poor mortals still; but if he would give his full name, &c., people could appreciate his comments, and verify or otherwise his remarkable experience, &c. *J. H. Goodacre, Elvaston Gardens.*

PELARGONIUM CAPITATUM (see p. 260).—This species does not yield the essential oil. The plant cultivated for the purpose in the South of France is *P. radula* var. *rosodora*, and this is also the plant shown in your illustration. I

and again in the evening between 7 and 8 o'clock. These plants were grown in cold frames from first to last, and were densely shaded. Plants thus grown stand well in a drawing-room, and open their flowers there. *J. W. Miles, Isleworth.*

PRIMULA "SPRING BEAUTY."—This, when it came up for certificate lately at the Royal Horticultural Society, was labelled *P. viscosa* Spring Beauty, with the additional information that it was a cross between this species and Auricula C. J. Perry. As a matter of fact, there is but little remaining of the "clammy Primrose," and it appears to me but one of the many cross-bred plants between the clammy Primrose and the garden Auricula that were plentiful enough twenty-five years ago. All these seedlings were then known as *Primula intermedia* var., and such names as Heroine, Warbler, Gem, and others were given to the best varieties. The plant shown as Spring Beauty is very near to Heroine; and I may say there is a good deal of sameness in the plants so raised. The newcomer, however, will direct attention again to this group, and I

Daffodil. It blooms a day or two later than midseason.

Mr. William Barr next showed us a variety named Lady Margaret Ferguson, having a white perianth and canary-yellow coloured trumpet with much spreading frill; Queen Christina, with white perianth and lemon-coloured trumpet; Elaine, having a white perianth and citron-coloured trumpet of unusual length; Weardale Perfection, a large bi-coloured trumpet, already described on previous occasions; Sentinel, another fine bi-coloured variety; Bridesmaid, a white perianth and lemon-coloured cup; Lucifer, a cup Daffodil with rich orange-red coloured cup; Gloria Mundi, Maggie May, a most beautiful cup Daffodil; King Alfred, a rich deep yellow trumpet Daffodil, of bold appearance, and large size; leaves very glaucous, and of extraordinary length and substance; Victoria, and others.

There were many unnamed seedlings that appeared to us of merit, including a rich yellow trumpet variety, which Mr. W. Barr said was his best seedling of the present year. Another that was interesting was a cup Daffodil, with a good white perianth, and a little golden colour at the base of the perianth-segments, thus casting a sort of halo around the trumpet.

We have not space to refer in detail to the standard varieties in the large nursery beds, though there were many that, like Leedsii, Duchess of Westminster, were of surpassing beauty.

THE EARLY TULIPS

were making a most brilliant show, and with Mr. Barr we took the names of a few of the most interesting. Such were La Laitière, white, with beautiful blue pencilling; Chrysolora, deliciously fragrant; Yellow Prince, Canary Bird, and Ophir d'Or, all yellow ones, the first and last being in Mr. Barr's opinion the two best; Princess Ida, white, with yellow flame; Koh-i-Noor, deepest coloured of any, intense crimson; Queen of the Netherlands, white, with flush of flesh colour or pink, a large, globular flower; Bruneilde, white, with a yellow flame and bronzy-brown shading; Grace Darling, bright red; Primrose Queen, a new yellow variety, and rather short flower; and Jenny, cerise, with white centre.

We were greatly interested in the groups of T. Greigii, usually known as intensely bright orange-red in colour, but so variable that here were a considerable number of forms varying from that colour, through rich bronzes and apricot tints to clear yellow. But in these latter there is always a flash of red of some degree upon the three outer segments, and a ring of red colour around the interior of the flowers nearly at the base. A new Tulip with flowers somewhat like those of T. Greigii, but possessing deep purple blotches at the base, and having plain and not marbled leaves, was T. Micheliana.

Other interesting plants in bloom included a collection of varieties of Iris pumila, a very variable but pretty species, growing about 3 inches high; Aubrietias, including two pretty seedlings Lilac Queen and Bridesmaid; Muscari conicum "Heavenly Blue"; and Erythroniums, which in the light soil at Ditton are planted 9 to 12 inches deep.

PLANT PORTRAITS.

GENTIANA ANGUSTIFOLIA, *Meehans' Monthly*, April.—An Atlantic American species, with linear leaves and brilliant blue flowers, each about 1½ in. long, and rather more in breadth.

ROSE PERLE VON GODESBERG, *Rosen Zeitung*, March.—A beautiful H. T. Rose of pale lemon-yellow colour. A sport from Kaiserin Augusta Victoria.

Obituary.

JOHN CRAWFORD.—It is with much regret that we record the death of Mr. John Crawford, formerly head gardener at Coddington Hall, near Newark. Deceased was born at Thorndon Hall, where his father was head gardener. After serving for a time with his father, the young man was with Mr. James Douglas, at Great Gearies gardens, Ilford, and subsequently under Mr. Melndee, at Hutton Hall, Guisborough, and eventually foreman for Mr. William Allan, at Gunton Park gardens, Norwich. After two years he became gardener to Colonel Thorpe at Coddington Hall, and soon proved himself to be a first-class gardener and fruit cultivator. He was well known as an exhibitor and as a writer to the horticultural press, contributing to these pages frequently for several years. Deceased was obliged to retire from Coddington several years ago, owing to an internal affliction. He proceeded to Norwich to undergo an operation which was unsuccessful, but which left him a great sufferer. "He continued to write for the press," writes Mr. Allan, "under exceeding difficulties and pain, having to be propped up in his bed for the purpose, and was so writing when I saw him a month ago. Mr. Crawford had a splendid character, and was an example to all who came within his influence and example: an honest man and a good Christian. Deceased leaves a widow in very indifferent health, with two sons and three daughters, the youngest boy being about eight years of age."

We hope to hear that the Royal Gardeners' Orphan Fund will afford its valuable aid to this deserving case.

THOMAS KING.—We regret to announce the death at the Castle Gardens, Devizes, of Mr. Thomas King. He died on Thursday, the 24th ult., after an illness of two days, at the age of sixty-seven years. The deceased, who was a man of very active habits, had been suffering from an insidious disease for some time past, but he appeared to be of fairly robust health, and was at Trowbridge transacting business two days before he died. Personally, Mr. King was an estimable man, and his quiet courtesy and obliging disposition, and his honourable, upright conduct, made him to be highly respected by all with whom he came in contact. He lost his wife by death two years ago, a bereavement that was severely felt by him. He leaves three sons and two daughters, one of the latter is in America.

Born at Roundway, near Devizes, he commenced his professional career at Roundway Park; and at the end of 1860 he took charge of the gardens of Devizes Castle, a position he retained until the day of his death. He made the Castle gardens famous for the production of fruit and specimen plants; he excelled in the cultivation of the Grape-vine, his Black Hamburgs being famed for their high quality; and he grew and exhibited Chasselas Musque in fine bunches with high finish, overcoming its tendency to crack. He excelled in Peaches and Nectarines, and at Trowbridge and other shows his fruits usually surpassing those from Rood Ashton Gardens. He was also a successful exhibitor at Bath. At one time he grew and exhibited splendid specimens of Fuchsias, growing them to a height of from 12 to 13 feet. After Mr. R. Valentine Leach ceased to reside at the Castle, Mr. King took over the fruit-gardens on his own responsibility; he then ceased to exhibit, but his services as a judge were in frequent request at the leading West of England shows; at

Bath especially he always acted as a judge of fruit, and the exhibitors had great confidence in his awards.

For several years past he superintended the exhibition of Chrysanthemums held in connection with the Devizes Benevolent Society's annual bazaar, and many other benevolent objects found in him a warm supporter. He was a Fellow of the Royal Horticultural Society. R. D.

HENRY APPLEBY.—The death of Mr. Henry Appleby on Tuesday, April 22, at his residence in London Road, Dorking, will be learnt by his many friends with great regret. The deceased was nearly 72 years of age. He had for many years carried on the Boxhill Nursery, which he had himself established, and had been a prominent man among the local horticulturists at the various shows, exhibiting at most of the local shows in the non-competitive classes, and in these and other directions manifesting his interest in gardeners and gardening. The business will in future be carried on by Miss Appleby, who has rendered great assistance in carrying on the business for many years.

PRIMULA "SPRING BEAUTY."

UNDER the name of P. viscosa "Spring Beauty," the plant shown in our fig. 92 was recommended an Award of Merit by the Floral Committee of the Royal Horticultural Society on April 8, when a plant was shown by E. A. Hambro, Esq., Hayes Place, Hayes (gr., Mr. Wm. Beale). The plant was described as a cross between P. viscosa and the garden Auricula C. J. Perry, in which case the new plant may be a true hybrid. The leaves are about 2½ inches wide and 3 inches long, a little more ovate than those of P. viscosa, but notched just as they are. The flowers are 1½ inches across, rich deep purple, with a cream coloured centre. The artist has drawn a leaf and flower of P. viscosa as shown, for comparison with those of the novelty. (See also paragraph on p. 295.)

SOCIETIES.

ROYAL HORTICULTURAL. Scientific Committee.

APRIL 22.—Present: Dr. M. C. Cooke, in the Chair; Messrs. Bowles, Worsdell, Saunders, Nicholson, Sutton and Worsley; Dr. Rendle, Prof. Boulger, Rev. W. Wilks, and Rev. G. Henslow (Hon. Sec.).

Report on Plants sent to the last Meeting.—Dr. M. C. COOKE writes as follows: "Daffodil leaves.—I failed to find any distinct evidence of bacteria in the etiolated spots, but still think that the theory of bacteriosis is probable. Stem tubers of Orchids.—Externally they exhibited rounded blackish spots, beneath which the cellular tissue was blackened deeply into the tuber. It had all the appearance of fungoid disease. I examined it at once, but no trace of mycelium or spores could be found. Kept in a damp atmosphere for fourteen days, it was then examined again, with like result. I cannot account for the spots, and can find not the slightest evidence that they are of fungoid origin. Tulip bulbs.—The outer scales were decayed, inner ones only being sound. The decayed portion gave no indication of fungus growth, and no trace of mycelium, but contained numbers of nematode worms. There were also other evidences of insect depredations. Japanese Maple.—The peculiar, globose, pale little bodies which were clustered in the axils of branches, proved to be agglomerations of minute fragments of woody tissue, apparently the exuviae of some grub. I did not remove them to ascertain if there were any excavations beneath, but referred them back for entomologists to examine. Orchid leaves.—There was an amorphous, brown, decayed matter in the cells, but no mycelium or fungous spores. I attribute the spots to some external cause. Linum trigynum. There was nothing on the

surface of the leaf, and no mycelium in the interior, and not the slightest trace of fungi. All I found in the white spots was that the cells were deficient in chlorophyll, just as in the Daffodil. There were just the abnormal cells, but no chlorophyll in them. I have often seen the same thing on leaves of the Honeysuckle, but could never comprehend it. There is doubtless some physiological cause for the manifestation of the disease, apparently a weakness in the plant, requiring some stimulus. Is it more heat, or more nitrogen in the soil? The fact of not flowering seems to indicate weakness. I can suggest nothing, only it is certain that there is no parasite at present."

"*Silver-leaf*."—Mr. WORSLEY showed stems of Peaches with blackened wood, as seen in a cross-section, indicating some condition which apparently injures the whole tree, producing the "silver-leaf" affection;

Nodules on roots of Robinia, &c.—Mr. ROGERS, Hexworthy, Launceston, Cornwall, sent some roots of Robinia, showing microbe-bearing tubercles which were terminal and globular, about one-eighth of an inch in diameter. They are also remarkably large on the roots of Laburnum, forming coral-like masses sometimes as large as a pigeon's egg.

Peach Blossoms—Mr. G. A. BUNYARD sent some blossoms of small-flowered varieties of Peach and Nectarine, illustrating a considerable difference in the degrees of protogeny. In some the pistil protruded to a great distance, the chance of self-fertilisation being very slight. In others it was much shorter. In all cases the stamens were inarching, so that self-fertilisation was easily secured. In a double-flowered kind there was a similar difference, so that they might be almost called "short-styled" and "long-styled," but

Market Cabbage as a result gave us almost every variety of Borecole, garden and cattle Cabbage, Savoy, and Sprouts. One Altringham Carrot gave a number of white roots. One root of Mangold, in four instances in four different seasons, produced a mixed crop of bulbs. And we have a very curious instance this year: In a 20-acre field of Giant Bronzetop Swede we found one root of Red Tankard Turnip, the finest we ever saw. It was planted in a private garden miles from any Turnip or Swede seed, was covered with muslin to prevent any chance of inoculation, and the produce is wonderful. There are a few Short Red Tankard Turnip, Greentop and Greystone Turnip, Purpletop and Greentop Swedes, as well as some intermediate forms. Can you suggest any cause for this state of things? In this case the Red Tankard must have been a sport from the Swedes; but in those we first indicate, the Cabbage and the roots were from old stocks that had been well selected for years. We enclose particulars of the Red Tankard produce; the others we did not note at the time. Report of the produce of one handsome Red Tankard Turnip, picked up in a 20-acre field of Giant Bronzetop Swede. Seeded in a private garden far away from any other Turnip or Swede seed. Covered with muslin to prevent inoculation. Forty-nine Purpletop Swede, seven Bronzetop Swede, 150 Bronzetop White Turnips, ten Greentop ditto, one Whitetop ditto, six Reddish-top ditto, eight Shorttop Red Tankard, and a score or two of small non-descript." The opinion of the Committee was that in a large mass of any one kind of plant the general intercrossing which takes place tends to equalise the produce to a general average, the would-be varieties being swamped; but when a single plant is isolated it can give rise to variations intact.

Leucocjum cernuum forming bulbs.—Mr. BRADLEY sent illustrations of this plant forming fresh bulbs above the one planted; he writes as follows: "The border in which these bulbs grew had from time to time been topped up by the addition of soil, the effect being that the base of the bulbs, which had originally been planted much shallower, had gradually been covered with earth to a depth of 6 or 8 inches. Nerine sarniensis showed a similar production of new bulbs. They had been planted about five years ago. When planting, a trench was thrown out to a depth of some 18 inches, and about 3 inches of manure put in, then the trench was filled up with soil and the bulbs planted at a depth of about 3 inches to the base below the surface of the soil. The trench was subsequently refilled as the soil sank, so that the bulbs were ultimately about 8 inches below the surface. Under these conditions they developed the upper bulbs." The interpretation appears to be that bulbs normally require to be at certain depths, some deeper than others. If they be too near the surface they form contractile roots, which pull them down, but in the present case the bulb being too deep, the difficulty is surmounted by the formation of another at the proper depth (see M. T. Masters' *Vegetable Teratology*, p. 84).

LIVERPOOL HORTICULTURAL.

APRIL 16.—St. George's Hall, where the sixteenth spring show was held, is a very suitable place in which to hold a show, but unfortunately, owing to there being few vacant dates, the show was delayed fully three weeks, consequently many of the earlier spring-flowering bulbs were past. Notwithstanding this, the display was of high quality, and the superb collection of Hippeastrums staged by Messrs. KER & SONS, Aigburth Nursery, showed much improved form and colour. Mention must also be made of an interesting display of Anthuriums in variety. Equally charming was the group of Orchids from Messrs. JNO. COWAN & Co. of Gateacre.

Messrs. T. DAVIES & Co., Wavertree, and Messrs. ROWLANDS, West Derby, each had tables of beautiful miscellaneous flowering plants and bulbs, the former having extra fine Mushrooms also.

A bold arrangement of Daffodils was sent by Messrs. DICKSONS, LTD., Chester. All the exhibits named above received Certificates.

In the Hyacinth classes, the most imposing was that for six pots in trebles, the varieties La Grandesse and King and Queen of Blues being admirable. J. W. HUGHES, Esq. (gr., J. McColl), Aigburth, had the best.

For twelve Hyacinths, distinct, A. EARLE, Esq. (gr., T. Hiltzman), scored easily, Electra, Mountain of Snow, King of the Yellows, La Belle, and City of Haarlem, being immense.

Rarely have Tulips been seen more perfect, Mrs. DUNN (gr., F. H. Keightley), Grassendale, and Mrs. SINCLAIR (gr., J. W. Thompson), Sefton Park, showing capitally.

Azalea mollis and Rhododendrons, from Mr. J. SMITH, were superior; Alderman W. B. BOWRING (gr.,



FIG. 92.—PRIMULA VISCOSA HYBRID "SPRING BEAUTY": AND A FLOWER AND LEAF OF P. VISCOSA FOR COMPARISON. (SEE P. 296.)

common also on Plum-trees and Portugal Laurel, but it has never been accounted for.

Tulipa sylvestris.—He also showed this plant, regarded as a true native by Hooker in S. W. Yorks, Norfolk, Suffolk, and Somerset, being naturalised elsewhere. Mr. Henslow observed that it grows abundantly in two valleys in Malta. Its distribution is from Holland southwards, so that in Somersetshire it may be a member of the British Mediterranean group. Mr. WORSLEY also showed specimens of Bidens delphinifolia with small yellow flowers, a Mexican annual, and also Marica cœrulea from Eastern Brazil. It has a bell-shaped flower with no tube, and belongs to Iridaceae. One species occurs in W. tropical Africa, the other eight in Eastern Brazil, indicating a probable former connection between the two continents.

Cephalotaxus, fruiting.—Mr. WILKS showed a bough, with fruit not usually seen in fruit in this country.

Priny and the Goat Moth.—Mr. HOLMES showed specimens of the stems injured. It is a plant not usually attacked by the caterpillar of this moth.

always protogenous. Mr. Bunyard observes that in the large flowered varieties the style is too long for the flower-bud, so that it is bent round. This is a common result in many self-fertilising flowers, as in Salvia verbeacea, Lamium amplexicaule, &c., so that it may possibly be so in this case; but it appears that the small flowered varieties are the most prolific, hence insect agency perhaps comes into play. Neither the bitter nor sweet Almond has a protruding style. Our wild species of Prunus, as the Sloe and Bird Cherry, are all protogenous, the cause probably being the cold temperature of early spring. He also sent flowers of Tibbett's Pearmain Apple, having unusually long styles. It is protogenous, and a scanty bearer.

Turnip Varieties.—The following interesting communication was received from Mr. GOULD, of Sleaford:—"We have occasionally planted a single extra good stock root to produce seed, and almost in every case the produce is mixed. When there are fifteen or twenty of the same type put in together, the produce is always satisfactory. For instance, one perfect Enfield

T. Ankers) having greenhouse Azaleas in 8-inch pots abundantly flowered.

Mr. ARTHUR EARLE had the best Azaleas in two classes; and Mr. A. MACKENZIE SMITH (gr., W. Lyon) choice strains of Primulas and Cinerarias.

The Amaryllis (*Hippeastrum*) class gave considerable trouble to the judges. It was a grand competition, A. A. PATON, Esq. (gr., Robert Ogston), Grassendale, being awarded the 1st prize, with Mrs. GILBERT W. MOSS (gr., T. Johnston) 2nd.

Some extra well-grown Hydrangeas figured among the six forced hardy plants, and an exceptionally good Clematis, Duchess of Edinburgh, was the best of two forced hardy plants, all from Mr. J. SMITH.

The 1st prize for a collection of three Orchids was won by F. CROSS, Esq., Grassendale (gr., Mr. C. Duke), and consisted of *Laelia cinnabarina* × *Cattleya Lawrenceana*, *Dendrobium Ainsworthii*, and *Oncidium Cavendishianum*.

EAST ANGLIAN DAFFODIL SHOW.

APRIL 16.—This, the second Annual show, was held in the Public Hall and Saloon on the above date, and proved highly successful in every respect, though the entries in some of the classes were limited, owing to the inability of growers to have fully-expanded blooms at the time. Still, there was an encouraging competition. Trade exhibits were very numerous, and made a great demand on the space at disposal, with the result that at times it was extremely difficult, owing to the large company, to make one's way from one side of the hall to the other. The Ipswich folk appear to be keenly interested in the Daffodil.

The principal competitive class was for twelve bunches of true trumpet Daffodils. The 1st prize was awarded to Mr. J. W. CROSS, Wisbech, who had in fine character *Glory of Leiden*, *Victoria*, *Empress*, *Emperor*, *Maximus*, &c. Mr. CROSS also came in 1st with six bunches of trumpet varieties; Mr. T. G. HEATLEY, Woodbridge, was 2nd.

With six bunches, Mr. JOHN ANDREWS, Woodbridge, was placed 1st. With six bunches of *Horsfieldi*, this fine bicolor being shown in good character, Mr. T. G. HEATLEY was again 1st; and Mr. J. B. MARSHALL, Woodbridge, 2nd.

The Woodbridge district appears to suit Daffodils, for the six bunches which gained the 1st prize for Mr. ANDREWS were very fine; Mr. R. COWLES, Stutton, was 2nd. Mr. HEATLEY came in 1st with twelve *Narcissi*, one bloom only of each being shown; Mr. J. ANDREWS taking the 2nd prize.

In addition, there were several classes for plants in pots, Daffodils included. The best collection of any types came from Mr. LEONARD BROWN, florist, Brentwood, who had some of the leading varieties, very fine, *Sir Watkin* especially. In another class, for a collection from which the trade were excluded, Mr. W. P. BURTON, Ipswich, was 1st.

With three good spreading bushes of Indian Azaleas the Venerable Archdeacon LAWRENCE, Little Bealings, was 1st; and Mr. SOUTHGATE, florist, Ipswich, 2nd.

Richardias were shown in threes; also *Astilbe japonica*, *Cyclamens* (very good for the late period of the spring), *Dielytras*, *Primulas* (Chinese), *Cinerarias*, &c., and there were one or two small classes for *Hya-cinths* in pots; also *Lily of the Valley*, *Tulips*, bowls of *Narcissi*, &c.

Groups of plants were also shown in the open class. Mr. A. A. BENNETT, Ipswich, obtained the 1st prize with a good assortment. In the gardeners' division, the Ven. Archdeacon LAWRENCE was 1st, and Mr. L. HOLDEN, 2nd.

Mr. SOUTHGATE was 1st with a group of tall Palms, mainly *Kentias*, and the gr. to Sir CECIL DONVILLE gained a 1st prize for some very good Royal Sovereign Strawberries in pots.

One interesting feature was the baskets or boxes of cut blooms contributed by market salesmen; not fewer than twenty-four bunches, and not more than thirty-six, and not fewer than six varieties. The 1st prize went to Mr. WHITE, a well-known market-grower at Spalding; his contribution did not show the slightest sign of injury or disturbance on the journey. Mr. W. B. HARTLAND came 2nd, with a very fine selection, but which had undergone a little crushing; Mr. W. SHARP was 3rd.

The best single bloom of Daffodil selected from the open classes, a somewhat difficult task, was *Glory of Leiden*, shown by Mr. J. W. CROSS in Class 1. The best bunch in the market salesmen's class was *Madame de Graaf*, shown by Mr. W. B. HARTLAND.

The floral decorations filled a spacious apartment known as the Saloon; the competition was good, and the leading arrangements decidedly artistic. Miss M. STEWART had the best arranged table of Daffodils; Miss M. SNELL was a good 2nd. The latter was 1st with a table composed of any spring flowers, a very pretty arrangement indeed. There were bouquets of spring flowers, stands of Daffodils, also baskets and bowls, and other features of an interesting character.

Trade contributions occupied a considerable space, and were of a particularly interesting character. Messrs. W. CURTISH & SONS, Ilighate Nurseries, had a large ground group of forced hardy shrubs of a varied character, *Magnolias*, including the purple-flowered

M. Lenné, being a prominent feature. Messrs. PERKINS & SONS, nurserymen, Coventry, had a large table of elaborate floral decorations, which formed a powerful attraction; and Mr. R. C. NOTCUTT, nurseryman, Ipswich and Woodbridge, had pots of early Tulips in considerable variety, cut Daffodils, and a group of plants. The Gold Medal of the Society was awarded to each of these exhibitors.

The Silver-gilt Medal was awarded to Messrs. WALLACE & Co., nurserymen, Colchester, for a unique collection of hardy plants; and to Messrs. FRANK CANT & Co., Rose Nurseries, for a remarkable collection of cut Roses.

Silver Medals were awarded to Messrs. R. H. BATH & Co., Ltd., Wisbech; to Mr. W. J. CROSS, of the same town; and to Messrs. BARR & SONS, King Street, Covent Garden, for collections of cut Daffodils. The last-named received Certificates of Merit for *Magni Coronati* Peter Barr and for *Incomparabilis Lucifer*, both very fine; and to Messrs. HOGG & ROBERTSON, nurserymen, Dublin, for cut Daffodils and Tulips.

LINNEAN.

APRIL 17.—Professor S. H. VINES, F.R.S., President, in the Chair.

Mr. A. C. SEWARD, F.R.S., F.L.S., read a paper by Miss S. O. Ford and himself, "On the Anatomy of *Todea*, with Notes on the Affinity and Geological History of the *Osmundaceae*." The main points were:—(1) the investigation of the anatomical structure of *Todea* as represented by *T. barbara* and two of the filmy species, *T. superba* and *T. hymenophylloides*, with a view to a comparison with that of *Osmunda*; (2) a summary of the geological history of the *Osmundaceae* and *Osmundaceous* characters; and (3) the question of the interpretation of the stellar structures of *Osmunda* and *Todea*. *Todea barbara* agrees in most respects with *Osmunda regalis* in anatomical features; in *T. superba* and *T. hymenophylloides* the protoxylem is mesarch, and occasionally almost exarch. In *T. hymenophylloides* the authors found an inner endodermis in the stem, characterised by its sporadic manner of occurrence; in the seedling stem no trace of an inner endodermis was detected. The authors expressed themselves in favour of regarding the stele of the *Osmundaceae* as a medullated monostele, and were unable to agree with the interpretation recently put forward by Dr. Jeffrey and Mr. Faulk.

SHERBORNE GARDENERS' ASSOCIATION.

APRIL 24.—A very largely attended gathering of this body was held in St. John's Rooms on the above date, to hear a paper by Mr. E. J. DAVIS, of Yeovil, on the interesting subject of "Flower Structure."

The topic was treated in a very clear and lucid way, without introducing difficult technicalities. The development of the tuberous *Begonia* naturally formed a good illustration, the structures of the earlier forms of flowers being compared with those so common to-day, and especially with the huge doubles. The change from stamen to petal was referred to—a process that had been brought about both by closely watching changes of a minor character, and inter-breeding and selecting to obtain more highly-developed results. To the ordinary mind, petals were the real flowers. To the botanist, the real inflorescence was found in the organs of fertility, ovary, style, pistil, stamen, and pollen-grains, although these might be comparatively inconspicuous.

The lecture was listened to with keen interest, and discussion followed, shared by Messrs. J. Crook, Forde Abbey; T. Turton, Sherborne Castle; A. Copp, Holnest Gardens; A. Dean, Kingston; J. Dean, chairman, and others.

THE MIDLAND DAFFODIL.

APRIL 24, 25.—A wonderful show of Daffodils rewarded the efforts of Mr. R. Sydenham and his colleagues on the committee of the Midland Daffodil Society, on the occasion of the fourth annual exhibition in the Show House of the Botanical Gardens, Edgbaston, on the above date. The competition was so good in nearly all the classes, and the miscellaneous exhibits so numerous, that the capacities of the place were severely tested. Many of the leading experts were present, several of them bringing novelties. The weather was fine and cool, and the attendance large. In addition to Daffodils and their near relatives, the *Polyanthus-Narcissus*, *Lilies*, *Lily of the Valley*, *Spanish Iris*, *Tulips*, and floral decorations with Daffodils were also invited.

A large party sat down to luncheon in the grounds early in the afternoon, and Mr. R. Sydenham and Mr. John Pope jointly entertained a party of about seventy persons in the Old Royal Hotel on the evening of the first day, Mr. John Pope in the chair, when a very pleasant evening was spent, and some matters relating to the Daffodil were discussed, such as "Its future," "The *Narcissus-fly*," and "The Daffodil for House and Table Decoration;" the last

subject, brought before the meeting by Mr. J. D. Pearson, Chilwell Nurseries, received the most attention. The Chairman, Mr. F. W. Burbridge, Mr. P. R. Barr, the Rev. G. Engleheart, and the Rev. S. E. Bourne with others, took part in the various discussions.

CUT FLOWERS.

The leading item in the competition was for a collection of Daffodils in fifty varieties, fairly representative of the three main groups, and so close was the competition represented by six competitors, that the judges—Miss Willmott, Rev. S. E. Bourne, and Mr. J. T. Bennett-Poë—occupied a considerable time in coming to a decision, having to point several of the collections. In the end Mrs. BERKELEY, Great Warley, Essex, was placed 1st with a superb collection, which included *Emperor*, *Mme. Plomp*, *King Alfred*, *Glory of Leiden*, *Mme. de Graaff*, *Grande*, *Brigadier*, *Mrs. Camm*, *Peach*, *Nelsoni major*, *J. B. M. Camm*, *Dorothy Yorke*, *Amadis*, *Mrs. Walter Ware*, *Acis*, *Miriam Barker*, *Katherine Spurrell*, *Crown Prince*, *Will Scarlet*, *Poetorum*, *Flora Wilson*, *Sequin*, *Sensation*, *Laura Lulworth*, &c.; 2nd, Mr. A. S. L. MELVILLE, Lincoln.

With twelve varieties of true trumpet Daffodils, Mr. J. DOUGLAS, Great Bookham, Surrey, came in 1st with some very fine blooms, having *Emperor*, *Empress*, *King Alfred*, *Mme. Plomp*, *Shakespeare*, *Horsfieldi*, *Madame de Graaf*, *Mrs. Walter Ware*, *Mrs. Camm*, *Capt. Nelson*, *Glory of Leiden*, and *Weardale Perfection*, a very well balanced collection. Mr. H. B. YOUNG, Metheringham, Lincoln, was a good 2nd; 3rd, Mr. J. H. HARTELL, Olton, Birmingham.

With six distinct varieties of trumpet Daffodils, Messrs. J. H. WHITE & SON, Spalding, were placed 1st, having *Emperor*, *Victoria*, *Mme. Plomp*, *Maximus*, *Mme. de Graaff*, and *Weardale Perfection*. Messrs. POPE & SON, King's Norton, were 2nd. We could only wonder why this fine collection was not placed 1st. Mr. W. B. LATHAM, Botanical Gardens, Edgbaston, was 3rd.

The best twelve varieties of medio-coronati Daffodils came from Messrs. POPE & SON, who had *Beauty*, *White Queen*, a great beauty aptly named; *White Lady*, *Lady Margaret Boscawen*, *Blood Orange*, *Marius*, *Ida Pope*, *Duchess of Wellington*, *Southern Star*, *C. J. Backhouse*, *Lucifer* and *Rosalind*. Mr. J. DOUGLAS was 2nd, and Mr. H. B. YOUNG 3rd.

With six varieties of medio-coronati, Messrs. J. H. WHITE & SON were first, having *Stella superba*, *Gloria Mundi*, *Nelsoni major*, *Duchess of Westminster*, *Barri conspicuus*, and *Minnie Hume*, a good lot of flowers; Mr. C. L. BRANSON, Colleshill, was 2nd.

With six distinct varieties of parvi-coronati, Mr. H. B. YOUNG was the only exhibitor, and he was awarded the 2nd prize.

The 1st prize for six distinct varieties of *H. poeticus* fell to Messrs. POPE & SON, the only exhibitors.

Class 9 was for twelve distinct varieties of Daffodils, and here Mr. R. C. CARTWRIGHT, Middleton Dene, King's Norton, was 1st with well known varieties in common cultivation, such as *Golden Spur*, *Sir Watkin*, *Horsfieldi*, *Emperor*, *Queen of Spain*, &c.; Mr. Cryer, gr. to Mr. J. A. KENRICK, Edgbaston, was 2nd.

A class for eighteen distinct varieties of Daffodils, six each of the three sections open only to amateurs, brought two entries, and Mr. ISAAC COOKE, Shrewsbury, was placed 1st.

A class for six vases of Spanish Iris, six stems in a bunch, brought two admirable collections. Mr. R. C. CARTWRIGHT was 1st, and Mr. R. SYDENHAM 2nd.

Plants in Pots.—With twelve pots of Daffodils, Mr. R. C. CARTWRIGHT was a good 1st, and Mr. ISAAC COOKE was 2nd. With six pots, Mr. W. B. LATHAM was 1st, and Mr. J. SEANEY 2nd. There was an excellent display of pots of *Polyanthus Narcissi* shown in sixes, Mr. R. C. CARTWRIGHT again taking the 1st prize, and Mr. W. B. LATHAM was 2nd.

Early single Tulips made a very fine feature. Six bulbs were shown in pots not exceeding 7 inches in diameter, and there was a very fine development of bloom. Mr. R. C. CARTWRIGHT again took the 1st prize, having *Keizer's Kroon*, *White Van Vondel*, *Unique* (very fine), *Grace Darling*, *Fabiola*, and *Queen of the Netherlands*; Mr. R. SYDENHAM came a close 2nd. There were five collections, and they made a striking feature.

Mr. J. A. KENRICK was placed 1st with six pots of *Lily of the Valley*, and also with six pots of *Lilium Harrisii*, having both in excellent character; Mr. I. COOKE was 2nd in both classes.

Floral Decorations included a collection of Daffodils arranged in vases on a small round table. Mr. J. A. KENRICK was 1st, and Mr. J. SEANEY 2nd.

Mr. J. A. HARTELL, Olton, was 1st, with a charming bouquet of Daffodils; and Messrs. POPE & SON, 2nd, also with a delightful bouquet.

The best three jars or bowls of *Polyanthus Narcissi* competing for special prizes given by Mr. R. Sydenham, came from Mr. I. COOKE; and Mr. J. A. KENRICK was 2nd. With three bowls of Daffodils, *Polyanthus Narcissi* excluded, Mr. KENRICK was 1st, and Mr. COOKE 2nd. The best box or basket of cut blooms packed for delivery by rail, came from the Rev. J. JACOB, Whitehall, Whitechurch.

The premier flowers selected from varieties in cultivation were as follows: Trumpet section, *King Alfred*, shown by Mr. J. DOUGLAS; medio-coronati *White*

Queen, shown by Messrs. POPE & SON; parvi-coronati Blood Orange, shown by Mr. A. S. L. MELVILLE.

SEEDLING VARIETIES.

A large number of seedlings were submitted for inspection by a Committee, and the following were selected for Awards: Lady Audrey and Queen Christina, two fine trumpet varieties, from Messrs. BARR & SONS. Miss WILLMOTT gained nine Awards: for one Ajax type, Warley Magna, the remainder were mainly of the parvi-coronati type. Cresset, Charles Wolley Dod, medio-coronati Southern Star, Moonstone, Betty Berkeley, Lilian, Incegnita, and Oriflamme.

Mr. A. S. L. MELVILLE gained an Award for Barrii, Branton, and Mr. KENDALL for Sir Francis Drake, a large trumpet variety. The Rev. G. ENGLEHEART had awards for Noble (medio), Imogene, Astrardente, Ariadne, Rhymester, and Egret, all Parvi or Poeticus types; Messrs. WM. WAYEREN & SONS, for Wayeren's Giant; Messrs. GROOT, for Glory of Noordwijk; and Messrs. PEARSON & SON, for Mrs. Hillhouse, all fine trumpet varieties.

MEDALS AWARDED.

Special medals were awarded seedlings as follows:—Magni, Queen Christina (Barr & Son), Medio, Charles Wolley Dod (Miss Willmott), and to Parvi Astrardente (Rev. G. H. Engleheart). A special Silver Cup, offered by Mr. R. Sydenham for the best group of seedlings (not in commerce), was awarded to Miss Willmott.

Miscellaneous collections received the following awards:—Large Silver-gilt Medals: Messrs. BARR & SONS, for Daffodils; Messrs. PEARSON & SONS, for Daffodils; the Rev. G. H. ENGLEHEART, for Daffodils; Messrs. DICKSON & Co., Ltd., Chester, for Daffodils; and to Messrs. REAMSBOTTOM, Alderborough Nursery, Geashill, King's County, Ireland, for a magnificent collection of double and semi-double Anemones of large size, and singularly rich colours, the result of careful selection. Large Silver Medals were awarded to Mr. H. J. JONES, Lewisham, for Daffodils; Messrs. HOGG & ROBERTSON, Dublin, for Daffodils and Tulips; Messrs. HEWITT & Co., Solihull, for floral decorations; Mr. R. SYDENHAM, for Daffodils and Tulips; Messrs. R. H. BATH, Ltd., Wisbech, for Daffodils; Miss CUREY, Lismore, Ireland, for Daffodils; Mr. F. A. WALTON, for Daffodils; and to Messrs. POPE & SONS, for a collection of plants, including some excellent herbaceous Calceolarias. Small Silver Medals were awarded to Mr. J. H. WHITE, Spalding; to Mr. W. J. CROSS, Wisbech, for Daffodils; and to Mr. R. C. CARTWRIGHT, for Tulips.



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period April 20 to April 26, 1902. Height above sea-level 24 feet.

| 1902. | DIRECTION OF WIND. | TEMPERATURE OF THE AIR. | | | | TEMPERATURE OF THE SOIL AT 9 A.M. | | | |
|-----------|--------------------|-------------------------|-----------|----------|---------|-----------------------------------|-----------------|-----------------|------------------------------|
| | | At 9 A.M. | | DAY. | | At 1-foot deep. | | At 2-feet deep. | |
| | | Dry Bulb. | Wet Bulb. | Highest. | Lowest. | At 1-foot deep. | At 2-feet deep. | At 4-feet deep. | LOWEST TEMPERATURE ON GRASS. |
| | | | | | | | | | |
| APRIL 20 | | | | | | | | | |
| TO | | | | | | | | | |
| APRIL 26. | | | | | | | | | |
| SUN. 20 | S.S.W. | 56.2 | 51.7 | 62.3 | 45.4 | 0.0 | 50.0 | 48.0 | 46.7 |
| MON. 21 | S.S.W. | 53.9 | 50.8 | 61.0 | 46.5 | 0.0 | 51.0 | 48.0 | 46.9 |
| TUES. 22 | S.S.E. | 53.7 | 51.6 | 66.7 | 53.2 | 0.0 | 51.7 | 49.2 | 47.2 |
| WED. 23 | S.W. | 52.2 | 48.0 | 74.3 | ... | ... | 50.5 | 49.3 | 47.2 |
| THU. 24 | S.S.W. | 55.9 | 49.6 | 63.2 | 39.7 | ... | 51.2 | 49.6 | 47.6 |
| FRI. 25 | S.S.W. | 57.7 | 50.2 | 64.7 | 36.0 | ... | 51.6 | 50.2 | 47.9 |
| SAT. 26 | E.S.E. | 47.9 | 44.7 | 57.0 | 43.2 | ... | 51.8 | 50.3 | 48.0 |
| MEANS | ... | 53.9 | 49.5 | 60.8 | 44.0 | 0.0 | 51.1 | 49.3 | 47.4 |

Remarks.—Fair weather has prevailed during the past week, with little rain and strong winds.

THE WEATHER IN WEST HERTS.

The recent spell of warm weather, which had lasted nearly a fortnight, came to an end on April 28, since which time lower temperatures have prevailed. In the early part of the week the temperature in the ther-

mometer-screen on two days rose in the middle of the day as high as 64°. On the other hand, during the last two nights, the exposed thermometer has registered respectively 3° and 4° of frost. The ground is now at about an average temperature at 1 foot deep, but is still nearly 2° warmer than is seasonable at 2 feet deep. No rain fell during the week, and only a few drops of rain-water have come each day through the bare soil percolation-gauge. The record of clear sunshine has been exceptionally good, the average duration for the last six days amounting to 10½ hours a day, and on April 23 the record reached 13½ hours, making this the sunniest April day I have yet recorded here. The wind has been for the most part high, and for 90 hours during the week, or nearly five days, came from some point of the compass between north and east. During the greater part of April 27, the average velocity of this north-easterly wind amounted to 13 miles an hour. During nearly the whole of the week the atmosphere has continued unusually dry. Garlic Hedge-mustard came first into flower on April 29, which is rather behind its average date in the previous eleven years, but one day earlier than last year. E. M., Berkhamsted, April 29, 1902.

MARKETS.

COVENT GARDEN, May 1.

[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 revise the list, and 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 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.]

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---------------------|-------|-------|---------------------|-------|-------|
| Arums, per doz. | 1 6 | 4 0 | Mermet Roses, p. | | |
| Asparagus Fern, | | | bunch | 2 0 | 5 0 |
| per bunch | 1 6 | 2 6 | Mignonette, per | | |
| Azaleas, per doz. | 4 0 | 6 0 | dozen bunches | 3 0 | 6 0 |
| Carnations, per | | | Narcissus, per | | |
| bunch | 1 0 | 2 6 | dozen | 1 0 | 1 6 |
| Cattleyas, per doz. | 9 0 | 12 0 | Pelargoniums, | | |
| Eucharis, per doz. | 3 0 | 4 0 | Scarlet, per | | |
| Forget-Me-Not, | | | dozen | 4 0 | 6 0 |
| p. dz. bunches | 2 0 | 2 8 | Pinks, per dozen | 3 0 | 4 0 |
| Gardenias, p. doz. | 1 0 | 1 6 | Roses, Maréchal | | |
| Iris, per dozen | 0 6 | 1 0 | Niel, per bunch | 2 6 | 3 0 |
| Jonquils, per doz. | 1 0 | 1 8 | Roses, Red, gen- | | |
| Lilium Harrisii, | | | eral, per doz. | | |
| per dozen | 3 0 | 6 0 | blooms | 1 0 | 1 6 |
| Lily of the Valley, | | | Smilax, p. bunch | 1 6 | 3 0 |
| dozen bunches | 6 0 | 12 0 | Tulips, all colrs., | | |
| Maidenhair Fern, | | | per doz. bunch | 4 0 | 8 0 |
| dozen bunches | 4 0 | 8 0 | — Parrot, bunch | 0 6 | 0 8 |
| Marguerites, Yel- | | | Roses, White, per | | |
| low, per doz. | 1 6 | 2 0 | bunch | 1 6 | 3 0 |

PLANTS IN POTS, &c.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|--------------------|-------|-------|----------------------|-------|-------|
| Adiantums, per | | | Heliotrope, p. doz. | 6 0 | 8 0 |
| dozen | 5 0 | 7 0 | Herbaceous and | | |
| Arbor Vitæ, per | | | perennial plants | | |
| dozen | 6 0 | 36 0 | in var., per box | 1 0 | 1 6 |
| Arum Lilies, per | | | Hydrangeas, per | | |
| dozen | 4 0 | 6 0 | dozen | 9 0 | 24 0 |
| Aspidistras, per | | | Ivy Pelargoniums, | | |
| dozen | 18 0 | 36 0 | per dozen | 6 0 | 8 0 |
| Azaleas, per doz. | 18 0 | 30 0 | Lobelias, per box | 1 0 | 1 6 |
| Cannas, per doz. | 18 0 | — | Marguerites, p. doz. | 6 0 | 30 0 |
| Cinerarias, per | | | Mignonette, per | | |
| dozen | 4 0 | 6 0 | dozen | 4 0 | 6 0 |
| Clematis, per doz. | 12 0 | — | Musk, per dozen | 3 0 | 4 0 |
| Crotons, per doz. | 18 0 | 30 0 | Palms, var., each | 1 0 | 20 0 |
| Doronicums, per | | | Pansies, per box | 1 6 | 2 0 |
| dozen | 4 0 | 6 0 | Pelargoniums, | | |
| Dracænas, var., | | | scarlet | 6 0 | 8 0 |
| per dozen | 12 0 | 30 0 | — pink | 6 0 | 8 0 |
| Euonymus, vars., | | | Rhodanthé, per | | |
| per dozen | 6 0 | 18 0 | dozen | 4 0 | 6 0 |
| Evergreens, vars., | | | Roses, various, doz. | 9 0 | 24 0 |
| per dozen | 4 0 | 18 0 | Spiræas, per doz. | 5 0 | 8 0 |
| Ferns in variety, | | | Stocks, per dozen | 4 0 | 6 0 |
| per dozen | 4 0 | 18 0 | Sweet Briars, per | | |
| Fuchsias, per doz. | 4 0 | 8 0 | dozen | 3 0 | 4 0 |
| Genistas, per | | | Tulips, all colours, | | |
| dozen | 6 0 | 8 0 | per dozen | 0 9 | 1 0 |

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|----------------------|-------|-------|-------------------|-------|-------|
| Apples, Californian, | | | Lemons, per case | 6 0 | — |
| cases | 10 0 | — | Mangos, per doz. | 10 0 | 12 0 |
| — Australian | | | Melon-Pears, per | | |
| dozen | 9 0 | 13 0 | dozen | 3 0 | 4 0 |
| — Tasmanian & | | | Melons, each | 2 0 | 3 0 |
| Victorian, per | | | Nectarines, doz. | 21 0 | 36 0 |
| case | 7 0 | 10 0 | Oranges, per case | 7 6 | 18 0 |
| Bananas, bunch | 1 0 | 1 6 | — Blood, p. case | 7 6 | — |
| — loose, p. doz. | 1 0 | 1 6 | — Californian, | | |
| Cherries, per box | 1 3 | — | per case | 22 8 | — |
| Figs, per dozen | 6 0 | 12 0 | Peaches, per doz. | 18 0 | 21 0 |
| Grapes, new Ham- | | | Pines, each | 3 0 | 1 0 |
| burgh, per lb. | 5 0 | 6 0 | Strawberries, A., | | |
| — B., per lb. | 2 6 | 3 0 | per lb. | 3 0 | 1 0 |
| — Muscats, lb. | 8 0 | 12 0 | — B., per lb. | 1 0 | 2 0 |
| — Alheira, 12 lb. | 8 0 | 12 0 | | | |

VEGETABLES.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---------------------|-------|-------|---------------------|-------|-------|
| Artichokes, Globe, | | | Mushrooms, house, | | |
| per dozen | 1 6 | 2 0 | per lb. | 0 10 | — |
| — Jerusalem, p. | | | Onions, new, green, | | |
| sieve | 1 0 | 1 6 | doz. bunches | 1 6 | 2 0 |
| Asparagus Sprue, | | | — English, per | | |
| bundle | 0 6 | — | cwt. | 5 6 | 6 0 |
| — English | | | — Egyptian, per | | |
| Paris Green | 1 3 | 5 0 | bag | 7 6 | — |
| — Paris | 3 6 | — | — picklers, per | | |
| — Spanish | 1 0 | — | sieve | 4 0 | — |
| — various | 0 6 | 2 0 | Parsley, per doz. | | |
| Beans, dwl., house, | | | bunches | 4 0 | 6 0 |
| per lb. | 0 5 | — | — sieve | 2 0 | 2 6 |
| — Madeira, per | | | Parsnips, p. cwt. | | |
| basket | 1 0 | — | bag | 3 0 | — |
| Beetroots, per | | | Peas in 1 lb. bags | 0 5 | — |
| bushel | 3 0 | 3 6 | — in flats | 8 0 | — |
| Cabbage, p. tally | 4 0 | 5 0 | — Jersey, per lb. | 0 8 | 0 9 |
| Carrots, per doz. | | | Potatoes, per ton | 40 0 | 85 0 |
| bunches | 2 6 | 3 6 | — new, per cwt. | 11 0 | — |
| — washed, per | | | — Frame, lb. | 0 4 | 0 5 |
| bag | 4 0 | 4 6 | — new Teneriffe, | | |
| — New, French, | | | per cwt. | 10 0 | 14 0 |
| per bunch | 0 4 | 0 6 | Radishes, p. doz. | | |
| Cauliflowers, per | | | bunches | 0 3 | 0 6 |
| dozen | 2 0 | 2 6 | Rhubarb, Yorks, | | |
| — tally | 5 0 | 12 0 | per dozen | 0 8 | 1 0 |
| Celery, per dozen | | | — outdoor, per | | |
| bundles | 10 0 | 12 0 | dozen | 1 0 | 2 6 |
| Coleworts, bushel | 1 0 | — | Salad, small, pun- | | |
| — bag | 2 0 | — | nets, per doz. | 1 3 | — |
| Cress, per dozen | | | Seakale, natural, | | |
| punnets | 1 3 | — | per dozen | 8 0 | 10 0 |
| Cucumbers, doz. | 2 0 | 3 3 | Shallots, per lb. | 0 2 | — |
| Endive, new | | | Spinach, English, | | |
| French, doz. | 0 9 | 1 6 | bushel | 2 0 | 2 6 |
| Garlic, per lb. | 0 3 | — | Stachys, per lb. | 0 3 | — |
| Horseradish, fo- | | | Tomatoes, Canary, | | |
| reign, bunch | 1 3 | 1 8 | boxes | 3 0 | 4 0 |
| Leeks, 12 bunches | 2 0 | — | — English, p. lb. | 0 10 | 1 2 |
| Lettuces, Cos, per | | | Turnips, per doz. | | |
| dozen | 2 6 | 3 6 | bunches | 2 0 | — |
| — Cabbage, per | | | — bag | 2 6 | — |
| dozen | 0 6 | 1 0 | — new, French, | | |
| Marrows, Vege- | | | bunch | 0 8 | 0 10 |
| table, dozen | 8 0 | 10 0 | Watercress, per | | |
| Mint, new, per | | | doz. bunches | 0 4 | 0 6 |
| bunch | 0 4 | — | | | |

REMARKS.—The Mangos in the market come from Jamaica, and the Melon-Pears from Teneriffe; Californian Plums, Kelseys, fetch 6s.; Tasmanian Pears, 8s. 6d. per case; English Asparagus from 1s. 3d., that from Worcestershire and Cambridgeshire fetches 2s. to 2s. 6d., and the home districts, 5s. per bundle. Plenty of small Broccoli can be had at very low prices, and trade is slow; Vegetable-Marrows have begun to arrive.

POTATOES.

Dunbar Main Crop, 85s.; Up-to-Date, 80s.; and other varieties, 40s. to 75s. Seed in variety, at various prices. John Bath, 32 & 34, Wellington Street, Covent Garden.

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending April 26, 1902, and for the corresponding period of 1901, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

| Description. | 1901. | 1902. | Difference. |
|--------------|-------|-------|-------------|
| | s. d. | s. d. | s. d. |
| Wheat | 26 8 | 28 9 | + 2 1 |
| Barley | 25 8 | 26 5 | + 0 9 |
| Oats | 18 8 | 21 6 | + 2 10 |

LAW NOTES.

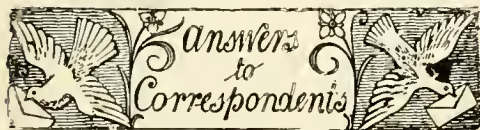
FIVE years ago M. Claes, formerly a collector in the employ of M.M. Linden, of Brussels, made public some statements relating to the importation of a particular type of Orchid, which were promptly repudiated by M.M. Linden. In consequence of this, M. Claes brought an action for £4,000 damages against M.M. Linden. The Tribunal of Commerce of Brussels dismissed M. Claes' action, and mulcted him in the costs. M. Claes appealed against this judgment. We are now informed that the Court of Appeal at Brussels has just confirmed the judgment of the Tribunal of Commerce, and condemned M. Claes in costs.

TRADE NOTICE.

HORSMAN'S NURSERIES, LTD.

THE above-named company has been registered by Jordan & Sons, Ltd., 120, Chancery Lane, W.C., with a capital of £21,000 in £1 shares. The objects of the company are to adopt an agreement made March 26, 1902, between T. Horsman, of Hkley, Yorkshire, of the one part, and J. H. Hiley, of Bradford, of the other part, and to carry on business as nurserymen, florists, seedsmen, manufacturers

of garden and agricultural tools and implements, dealers in and manufacturers of artificial manures, builders of greenhouses, conservatories, forcing and other frames, forcing-houses and other horticultural buildings, boiler, and other sheds, landscape gardeners, builders, commission-agents, valuers, and auctioneers. The directors are W. Horsham, W. Barker, A. Wisworth, W. Forrest, and G. Horsman. Qualification £250. Remuneration £50 per annum each; Thomas Horsman, as managing director, £300 per annum. Registered office, 102, Godwin Street, Bradford.



**** EDITOR AND PUBLISHER.**—Our correspondents would obviate delay in obtaining answers to their communications, and save much 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 all communications intended for publication, or referring to the literary department, should be directed to the EDITOR. The two departments, publishing and editorial, are quite distinct, and much unnecessary confusion arises when letters are misdirected.

ANEMONE CORONARIA ATTACKED BY A FUNGUS: *Windflower*. Is attacked by the Clustercup fungus, *Æcidium coronaria*. All infected plants should be removed and burned, as the mycelium is perennial in the tissues. Hence the disease appears year by year when once infected, and the spores produced also infect neighbouring plants. *G. M.*

BEGONIA DISEASED: *H. O. E.* A minute species of parasitic *Botrytis* is present in the tissues. Unless the plant is of exceptional value, it would be safest for the remaining plants to destroy this one at once. *G. M.*

BLUE PRIMROSES: *Primrose*. Blue flowered varieties are not common; at the same time they are procurable from the nurserymen. Those you send show only a tendency in that direction, the flowers being mostly of red and purple tints.

CUCUMBERS GOING OFF WHEN JUST SET: *C. H. C.* Caused probably by eelworms on the roots introduced with the pasture loam. Clear them out, obtain soil from a fresh source, which sterilise by heat (bake it), or use only that which has been kept in a stack clear of all growing herbage for a year. You should have sent roots and shoots, &c.

FIGS: *E. R.* The leaves are very much infested with thrips.

FIGS DISEASED: *Brown Turkey* and *J. R.* The fruits and foliage are badly attacked by *Cercospora Bolliana*, a disease that usually attacks only the foliage. Burn all diseased fruits and foliage, and syringe the plants with Bordeaux Mixture or sulphide of potassium, $\frac{1}{2}$ oz. in a gallon of water.

GRUBS IN STRAWBERRY-BED: *J. S.* The larvae of Daddy-Longlegs, and very injurious to the roots of plants.

INSECTS: *Sidcup*. The insect is one of the wild bees (*Andrena fulva*), a very common species, which, although it lives in colonies, each parent bee occupies a separate tunnel or burrow. Each bee forms a few cells at the end of the burrow, and stores each with a single ball of pollen. A single egg is laid on each ball, and the latter is sufficient food to bring the insect through its larval stage.

INSECT IN ROLLED-UP LEAVES OF THE APRICOT: *W. A.* *Lyda nemoralis*; you cannot do more now than squeeze the tips of the shoots, and thus kill the caterpillars within them, and apply the garden-engine with considerable

force to the trees. Another year, in January have the trees dressed with an insecticide—say Gishurst's Compound Soap—using about 3 oz. in a gallon of water; also syringe the trees with water in hard frosty weather. If the wall is full of holes and the pointing in bad order, let it be repointed, and all holes filled up with cement.

NAMES OF FRUITS: *J. C.* We do not recognise the Apple from the one fruit sent. It is probably a local one.

NAMES OF PLANTS: *B. E. G.* 1, *Ophiopogon Jaburan*; 2, *Corehorus japonica*; 3, *Centropogon Lueyanus*; 4, *Oplismenus Burmanni variegatus*; 5, a *Bomaria*, no flowers sent; 6, *Coronilla glauca* probably—no flowers; 7, *Begonia*, material insufficient; 8, *Sedum album variegatum*, an old-fashioned bedding plant, and inmate of the greenhouse.

—*H. J.* *Cupressus thyoides* and *Ribes sanguineum*.—*Lyminster House*. 1, *Philadelphus mexicanus*; 2, *Berberis Darwini*.

—*A. J. L.* 1, *Angræcum sesquipedale*; 2, *Miltonia spectabilis radians*.—*Masdevallia*. 1, *Dendrobium Pierardi*; 2, *Vanda ecerulescens*; 3, *Sarcanthus appendiculatus*.—*W. B.* 1, *Ornithidium Sophronitis*; 2, *Dendrobium Devonianum*; 3, *Eria obesa*.—*F. T. G.* *Brassia lanceana*, native of Surinam. *Brassias* are suitable for growing in either pots or baskets, using turfy peat in small nodules, and plenty of drainage. The warmer part of a Cattlehouse is a proper place for them, and in winter they should be placed in moderate warmth and as much moisture afforded as will prevent shrivelling of the pseudo-bulbs. In summer the plants require plenty of water.

—*A. B. Steele*. *Festuca*, of the ovine section, perhaps *rubra*, but cannot venture a name in such a critical group with such poor material. —*C. Best*. 1, *Dodecatheon Media* var.; 2, *Narcissus pseudo-Narcissus* var. —*S. O. S.* 1, *Pellionia pulchra*; 2, *Rhoea (Tradescantia) discolor*; 3, *Oncidium sphacelatum*; 4, *Aërides odoratum*; your numbers were not attached, but you will be able to identify the specimens, if not as you placed them. —*C. S.* *Erythronium giganteum*. —*H. K.* 1, *Forsythia suspensa*; 2, *Veronica Traversii*; 3, *Magnolia stellata alba*; 4, *Hippophae rhamnoides* (Sea Buckthorn). —*Pentas*. *Lelia harpophylla* and *Russelia juncea*. —*F. S. G.* *Dendrobium aggregatum* and *Forsythia suspensa*. —*E. T.* *Epidendrum bigiberosum*. —*G. T. R.* 1, *Berberis dulcis*; 2, *Cotoneaster micropholla*; 3, *Berberis Darwini*; 4, *Olearia Haastii*; 5, *Megasea crassifolia*; 6, *Heuchera sanguinea*. —*G. P.* *Forsythia suspensa*. —*R. J.* *Lewisham*. *Polypodium lycopodoides*. —*Amateur*. 1, *Choisya ternata*; 2, *Diplazum glutinosus*; 5, *Sedum Sieboldi*. Send Nos. 3, 6, and 7 when in flower. We do not undertake to name varieties of *Pelargoniums*, but No. 10 appears to be *Marshal McMahon*; 11, *Bijou*; 12, *Crystal Palace Gem*. —*V. Griffiths*. Appears to be a *Prunus* of some kind; send when in flower. —*C. J. Porter*. We are unable to name seedling varieties of *Rhododendrons*. —*Very Anxious*. *Thuya occidentalis*. The *American Arbor-vitæ*; the other, *Juniperus sinensis*, so far as we can tell from such a scrap. —*Vine Leaves*. *Anemone stellata alba*.

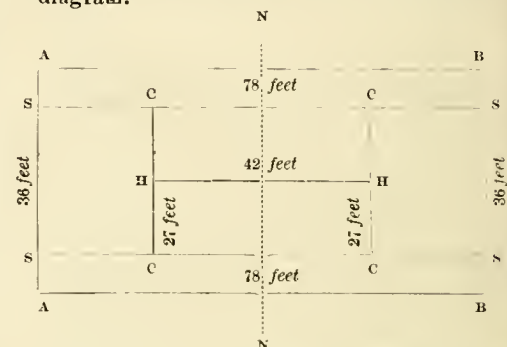
PALM LEAF: *W. J. S. G.* There is nothing to indicate the cause of the disfigurement. Had it been due to the effect of the eriosote, the injury would probably have been more serious.

PALMS IN ILL-HEALTH: *C. W. H.* The results of indifferent cultivation. Remove them from the tubs forthwith, extract most or all of the ten-year-old soil from the roots, and repot firmly in sound loam three-quarters, and peat one-quarter, leaving ample space for water at the top. Make a mild hotbed in a sheltered but not much shaded spot, and sink the tubs to the rim therein. In hot weather frequently syringe the trees.

PANSY: *C. & S.* We do not think the flower has any particular merit.

PREVENTION OF MILDEW: *W. B.* Let the hot-water-pipes be coated with lime-wash containing a pint of flowers-of-sulphur per pailful, and keep saucers filled with water containing sulphur in solution, placing these in numbers where evaporation by sun-heat will rapidly take place, and be careful not to admit cool air by the lower sashes. As a further precaution remove all plants and weeds which are apt to be attacked by mildew from the vicinity of theinery. Should the fungus still appear on the Vines, use sulphide of potassium at the rate of $\frac{1}{2}$ oz. in a gallon of water, applying it with a syringe; or use a sulphurator and flowers-of-sulphur.

TENNIS COURT: *Flora*. You will obtain the information you require from the following diagram.



A B, B A, double court for three or four players; S S, S S, single court for two players. A A and B B are the base lines; A B, A B, and S S, S S, side lines; C C, and C C, service lines; H H, half court lines; N N, net. A court for the single game is 27 feet wide, and 78 feet long; and for the double game, 78 feet long, and 36 feet wide. The posts for supporting the net should be placed 3 feet beyond the sides. The service lines run parallel to the net, and are 21 feet distant from the same.

TO MAKE GRAPE-VINES BREAK NEAR THE GROUND-LEVEL: *W. H.* If it is not desirable to cut back the Vines to a point near the ground, you might layer the canes in the soil along the front of theinery, or bend the Vines so that the ends of the rods come almost to the soil, and keep them in that position till the breaks grow strong at the base. The strongest on each Vine must be selected, and afforded space to develop good foliage, and be trained in parallel to the old canes for two years, when, if the new canes are strong, they may be cut back to half or one-third of their length.

TULIPA: *Max Leichtlin*. *Tulipa Dammanni* (Regel's *Garten Flora*, t. 1300, fig. 2). *J. G. B.*

VALOTIA BULBS: *J. G. W.* If you look carefully upon the decaying portions of the bulbs you will be able to see a large number of white, glistening mites. These are known as the bulb or Eucharis-mite, and are exceedingly difficult to exterminate. We think your best course will be to burn the bulbs and get a fresh stock.

VINE LEAVES INJURED: *Vine Leaves*. Insufficient or no ventilation at the time of a sudden burst of sunshine, and the leaves moist at the time. You must pay closer attention to affording air at such moments.

WEED IN LAKE: *L. L.* Get some feathered scavengers, as swans, ornamental ducks, &c.

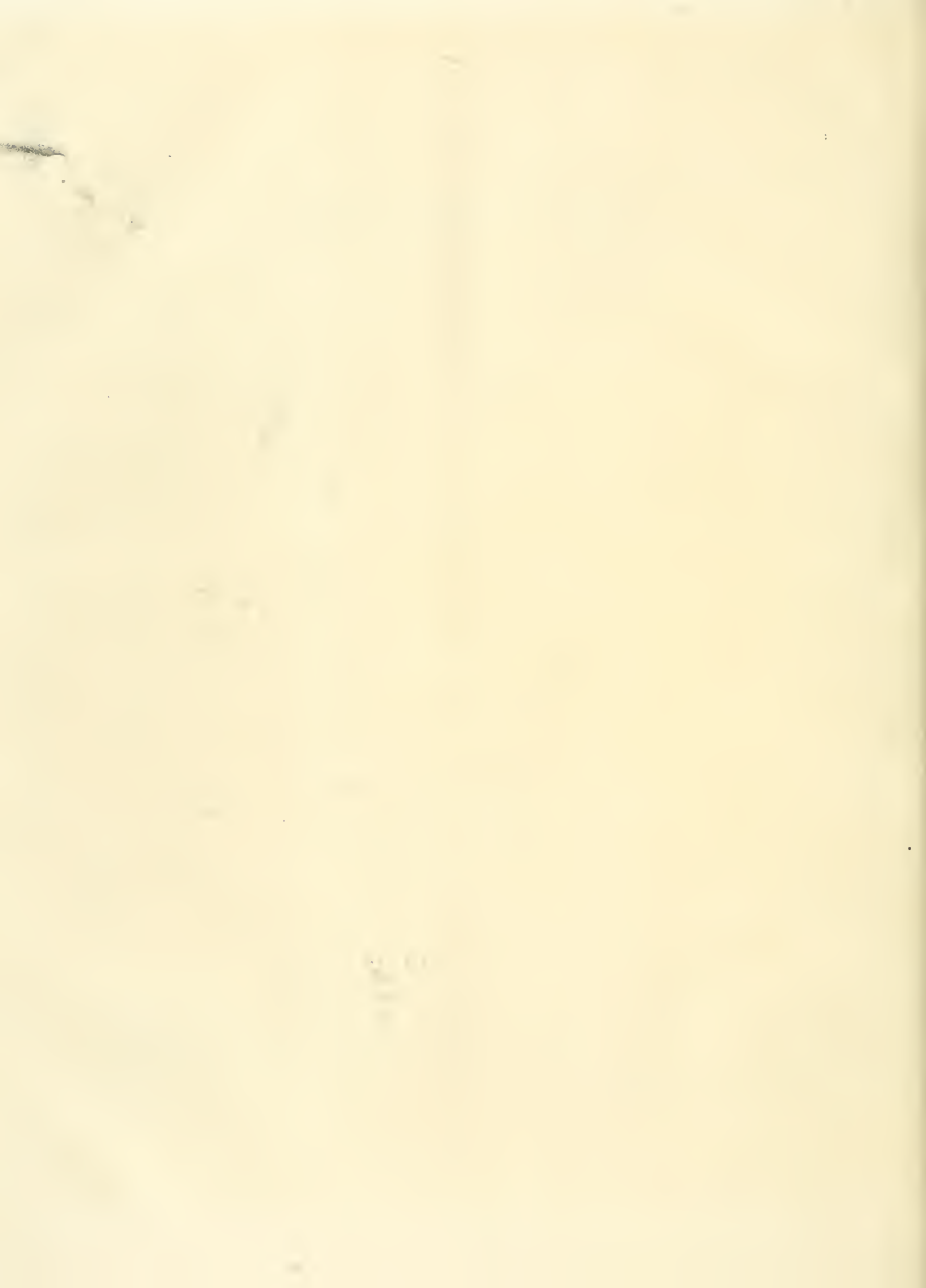
COMMUNICATIONS RECEIVED.—*L. P.*—*E. Ballard*—*E. W. Day*—*F. B.*—*J. R.*—*F. W.*—*Rev. C. W. D.*—*Oncid.*—*G. D.*—*A. W.*—*Keele*—*G. N.*—*Crystal Palace Company*.—*Sec. Nat. Dahlia Society*.—*E. V. B.*—*G. M.*—*J. H. G.*—*W. A.*—*G. B.*—*J. G. W.*—*J. F. McI.*—*J. S.*—*G. W.*—*J. O'B.*—*J. J. W.*—*J. B.*—*F. Clipstone*—*H. W. W.*—*M. Nicholls*—*D. Houston*—*C. T. D.*—*H. M.*

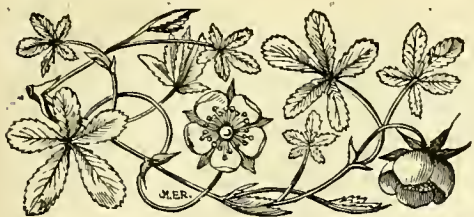
PHOTOGRAPHS RECEIVED AND UNDER CONSIDERATION.—Eight subjects from Irish gardens, from Arthur Jones & Son, Dublin. —*L. E. W.*

DIED.—*Mrs. JOHN WILLS*, of the firm of Wills & Segar, South Kensington, died on April 17, aged eighty-three years.



THE DAIRY GROUNDS, ALNWICK CASTLE.





THE

Gardeners' Chronicle

No. 802.—SATURDAY, MAY 10, 1902.

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MARTAGON LILIES.

THE great Martagon group of Lilies is so widely distributed, that it might almost be said of it that, like the Element of Happiness as described by the poet, it "has no localities"; for, though I am not aware that it exists in Africa, it is found in Europe, Asia, and America. Some of its noblest forms, such for example as the uniquely coloured *Lilium pardalinum*, the famous "Panther Lily," and *Lilium Humboldtii*, which bears the name of a most heroic naturalist, come to us from California, a region whose flowers rival those of Japan, while its gigantic trees are the wonder of the world. Both of these Lilies are great acquisitions to our British gardens; where, however, as I know from experience, *Lilium pardalinum* does not always attain (however assiduous the attention of its cultivator) to Californian dimensions. In my own garden the beautiful Lily of Humboldt has been found more reliable, having grown and flowered there with commendable persistence (though not increasing its bulbs to any extent) for many years. The Panther Lily has taken much longer to establish, and is at last beginning to grow stronger, though its tendency here is to degenerate by the superfluous generation of a large number of exceedingly small

bulbs. This, however, is a peat-loving Lily, and it does not find in my garden-borders this essential kind of soil. The new hybrid entitled *Lilium Burbanki* ×, named after a celebrated Californian cultivator, who has also distinguished himself as a raiser, flowers moderately well; but it does not grow with the vigour or strength I anticipated, after reading in the catalogues such glowing characterisations of its reliability and marvellous floriferousness. Of a widely different character are *Lilium chalcedonicum*, the brightly beautiful Scarlet Martagon, a native of Eastern Europe, and *Lilium monodelphum* var. *Szovitzianum*. These are among the most proudly treasured of my floral possessions; their colours are artistic and richly effective, and they seem to grow stronger and more commanding in their impressiveness year by year. *Lilium Szovitzianum* is a supreme favourite of the venerable President of the National Rose Society, who cultivates it assiduously and lovingly in the Deanery Gardens at Rochester, which I had the privilege of visiting some years ago. Sir Edwin Arnold, in his beautiful poem—almost epic in its interest—entitled "The Light of the World," sings of the exquisite Scarlet Martagon as the Lily so memorably immortalised by Jesus Christ; but this must be a (pardonable) mistake, for Mr. J. G. Baker, of Kew, once told me that *Lilium chalcedonicum*, though it may have been introduced into Palestine, is not a native of that country, only one Lily, viz., *Lilium candidum*, being found, growing sparsely, among the lower slopes of the Lebanon Range.

Another member of the widely-distributed Martagon family, *Lilium dalmaticum*, grows vigorously here, but I have always regarded this special variety as more interesting than beautiful. It is, however, valuable for the sake of contrast and artistic variety, and for this special purpose should be planted not far from the Scarlet Martagon. I am not an enthusiastic admirer of Martagon album, nor have I found it reliable. I have, on the other hand, a great regard for that refinedly beautiful buff-coloured Lily, entitled *Lilium excelsum* ×, a most fascinating hybrid between *Lilium candidum* and *Lilium chalcedonicum*. A few more variations of equal attractiveness would be acquisitions to our gardens, but such, unfortunately, are extremely rare. *David R. Williamson*.

THE WILD FORMS OF THE CHRYSANTHEMUM.

WITH regard to the wild forms from which the cultivated Chrysanthemums have been derived, Mr. Hemsley some years ago went into the question and published his views in this Journal.* He showed that *Chrysanthemum indicum*, which is a widely spread plant in Japan and China, could easily be recognised in the wild state. He considered that a plant found by me in the mountains of Hupeh was probably the parent form, from which was obtained *C. sinense*, Sabine, a name which must give way to the prior one of *C. morifolium*, Ramatuelle. It is this plant which is now illustrated (fig. 93, p. 302), and concerning which I shall say more afterwards.

There remains a series of plants, of a different aspect, occurring wild in North China and Japan; these were formerly considered by Maximowicz and others to be true *C. sinense*.

They are, however, easily separated as a distinct variety, to which Mr. Hemsley gave the name *C. morifolium*, Ram., var. *gracile*.

All the cultivated plants introduced into Europe were at first considered to belong to one species (*C. indicum*). Ramatuelle was the first to separate *C. morifolium*,* the name which he attached to varieties in which the ray differed in colour from the disc; while he restricted *C. indicum* to those varieties in which the ray and disc were both yellow. This distinction holds good in the wild plants; and Ramatuelle's name should be taken up, although *C. sinense*, Sabine, is much more generally known. The synonymy of the two species is fully given by Mr. Hemsley in the article cited (p. 586), and is complete, but for the following names, which were given by Des Moulins † to the two species, namely, *Dendranthema indica* and *D. sinensis*.

The differences laid down by Sabine ‡ between the two species do not all hold good in the wild forms. He ascribes to *C. indicum* pale green foliage, and says that the uppermost leaves are entire, while the leaves in general are smaller than in the other species. In wild forms of *indicum* the foliage is not always pale green—at least, on both surfaces; the uppermost leaves are not entire, and the leaves of the plant are often larger than those of *sinense*.

Mr. Cosmo Melvill § has lately laid down the following distinctions:—

"*C. indicum*.—Leaves flaccid, somewhat pinnatifid, finely denticulate. Ray mostly yellow, short.

C. sinense.—Leaves more coriaceous, often glaucous beneath, sinuato-pinnatifid, dentate. Ray long, pink or white."

I have lately examined the specimens in the Kew Herbarium, and the following diagnosis is an attempt to distinguish more distinctly the actual differences that are visible in the wild plants.

1. *C. indicum*, L. (fig. 94, p. 303).—Leaves thin, flaccid, pinnatifid, with acute or mucronate serrations; outer involucre bracts broad and scarious, except the herbaceous nerve. Ligules yellow, shorter than the diameter of the disc. China and Japan, widely distributed.

2. *C. morifolium*, Ramat.; *genuinum*, Hemsley. —Leaves thick, coriaceous, entire or slightly incised; outer involucre bracts thick, linear, acute, densely albo-tomentose. Ligules white, equal to or larger than the diameter of the disc. China: Hupeh and Loohoo.

3. *C. morifolium*, Ramat.; var. *gracile*, Hemsley. —Leaves thin or only moderately thick, palmatifid or pinnatifid, dentate, the teeth being often mucronate. Outer involucre bracts herbaceous, varying in thickness and pubescence, linear, acute. Ligules white, pink, or lilac; equal to or larger than the diameter of the disc. N. China, Szechwan, Mongolia and Japan.

As I understand that Sir Joseph Hooker is about to publish a figure of the wild *C. indicum*, I shall not say much concerning it. It is always readily distinguishable from the other species. A specimen from Yunnan (my No. 9941) has leaves approximating in form to certain varieties of *morifolium*, but it is the true *indicum* from the character of the flower.

With regard to genuine *C. morifolium*, the Loohoo specimen collected by Wright differs from the Hupeh wild plant in the leaves, which have a few broad, short, rounded lobes; but the flowers seem to be the same. This plant

* Journ. d'Histoire Naturelle, II. (1792), p. 240.

† Actes Soc. Linn., Bordeaux, xx., p. 561

‡ Trans. Linn. Soc., xiv., 1825, p. 145.

§ Proc. Manchester Lit. and Phil. Soc., 1902, Jan. 7., p. xxi.

* Gardeners' Chronicle, 1839, vol. II., pp. 586, 652.

of Wright's may, however, be a cultivated specimen.

The other specimens of genuine *C. morifolium* in the Kew Herbarium were collected by me (Nos. 1115 and 3102) in Hupeh. I found the plant growing on the Dome Mountain, near Ichang, and adjacent mountains to the south of that place, over a very limited area, where the rock formation was conglomerate. Most of the other mountains near Ichang are composed of limestone, and I failed to observe the plant on this formation. It flowers in October and November, and may be thus described:—

A shrubby plant, erect, rigid, 2 to 3 feet high, branching, and bearing few leaves. The leaves are coriaceous and thick, about 2 ins. long, and having a dense white tomentum on the under surface; they are variable in shape, from ovate to lanceolate, but always cuneate at the base; the margin is entire or coarsely toothed. The flowers have a yellow disc and a white ray, somewhat larger than the diameter of the disc. The outer involueral bracts are thick, linear, acute, and covered with a dense white tomentum. An illustration of this plant is now given (fig. 93).

An examination of the numerous specimens of Mr. Hemsley's variety, *gracilis*, show that these may be easily divided into two sub-varieties, as follows:—

C. morifolium, R.; var. *gracilis*, Hemsley, A., China.—This is a small plant, about a foot high, which was described by Maximowicz as var. α of his *Pyrethrum sinense*; it occurs in North China. The leaves are variable in shape, but the larger ones are palmatilobed and cordate, the lobes having a few mucronate, small teeth; they are thin in texture, and glabrous, except a few hairs on the nerves. The outer involueral bracts are thin and herbaceous, linear and acute. The ray is white, pink, or lilac. There are three specimens from Kansu, Szechwan, and Mongolia, with the leaves somewhat different in shape, tending to be cuneate at the base; and in these the outer involueral bracts are more pubescent.

C. morifolium, R.; var. *gracilis*, Hemsley, B., Japan.—This is a larger plant, reaching 2 feet in height, which corresponds to Maximowicz's variety β japonicum of his *Pyrethrum sinense*. The leaves are densely pubescent underneath; they are variable in shape, but the larger ones are always palmatilobed and rarely cordate, and they are not so small as in the Chinese form. The teeth of the leaves are scarcely mucronate; the flowers are similar to those of the preceding sub-variety, but the outer involueral bracts are thicker in substance, and decidedly tomentose; the ray is white.

There occurs a wild form in the province of Satsuma, in Japan, which was described and figured in the *Tokyo Botanical Magazine* (No. 47, 1891, p. 2), as *C. sinense*, Sabine, var. *Satsumensis*, Yatabe, but there is no specimen of this at Kew. According to the description, it is a stronger plant than the preceding, with coriaceous leaves, which are densely albotomentose on the under surface, and pinnatifid into three or five lobes, the lobes having coarse, obtuse teeth. The ray is white, and the outer involueral bracts are linear and densely tomentose. This variety in some respects seems to approach genuine *morifolium*.

Considering the great variety exhibited in the wild plants, and the fact that the interior of China is really little explored, we may expect other forms to occur which will connect more closely the two varieties *gracilis* and *genuina*, and it is perhaps prudent not at present to invent new specific names. If, then,

all these wild forms belong to one species, the extreme variation which they show, as regards pubescence and thickness of the leaves, and of the involueral bracts, the different colours of the ray, and the varying shape of the leaves, are all in keeping with the extreme variation which is observable in the cultivated plants.

The *Chrysanthemum* has been known in China from the earliest times, but we cannot

has always been accessible to Chinese travellers, situated as it is on the great river and on the route to Szechwan, was the district from which the gardens in centres of refinement like Loochoo and Nanking obtained the parent forms of many cultivated plants. At any rate, we find at Ichang wild forms of the *Chrysanthemum*, *Primula sinensis*, *Anemone japonica*, &c., which have not been met with near the coast. *Augustine Henry*.



FIG. 93.—*CHRYSANTHEMUM MORIFOLIUM* = *SINENSE*: ONE OF THE ORIGINALS OF THE *CHRYSANTHEMUM*.

From Dr. Henry's wild specimens. (See p. 301.)

obtain any accurate evidence as to how the cultivated forms arose. A Chinese writer in the eleventh century, however, observes:—"The *Chrysanthemum* is a common plant. There are many varieties with large and small flowers. Some have flowers with a yellow disc, and a white ray; others are entirely yellow." At this period there were evidently two strains in cultivation in China, one derived from *C. indicum*, and the other from *C. morifolium*.

I am inclined to believe that Ichang, which

NEW OR NOTEWORTHY PLANTS.

PINUS [LARICIO] PINDICA.*

WE owe to the kindness of Mr. Oscar Bierbach, the inspector of the Botanical Gardens, Jevremovac, Belgrade, Servia, the opportunity of laying before our readers an illustration of one of the *Laricio* group of Pines, of one which,

* *Pinus pindica*, Formanek, in *Verhandl. d. Naturf. Verein., in Brünn*, xxxiv., Bd. (1896), pp. 20–22, teste Bierbach.

indeed, was considered as a distinct species by M. Formanek, but which we should rather consider as a marked variety of *P. Laricio*, a notoriously variable species. To cultivators it is not material whether the form be considered as varietal or specific, suffice it to say that for cultural purposes it is distinct.

As M. Formanek's paper is not readily

Formanek, the crown broadens out as in *P. nigra*, Arnold. By this it is easily recognised even from a distance. Also, the young cones of *P. pindica* are pale yellow, the fringes of the leaf-sheaths being much shorter than is the case with those of *P. leucodermis*. The apophyses of *P. pindica* are convex and arched, and the umbo is unprotected. These pecu-

pindica takes an intermediate position between *P. leucodermis* (G. Beck), and *P. Laricio* (Poiret); but the latter comes much nearer to it, and *P. pindica* might be understood as a separate race.

In order the better to distinguish it from *P. Heldreichii*, we append Dr. Christ's original description of the latter species.* Having seen Dr. Christ's specimens, we can say that they have but little resemblance to the present species (see *Gardeners' Chronicle*, June 7, 1884, fig. 140, p. 740, and fig. 97, p. 304 of the present issue).

The bark of the ripe shoot of *P. pindica*, as sent by Mr. Bierbach, is fawn-coloured, roughened by the projecting remains of the leaf-bases. Bud imperfect (one only seen), ovoid-acute scales, loose, chestnut with whitish margins. The leaf sheaths are about 1 cent. long, the lower scales convolute coriaceous, the upper hyaline membranous. The leaves are in pairs, each about 12 cent. long, pale-green, semiterete, channelled on the upper surface, faintly serrulate towards the tip.

On transverse section, fig. 96, p. 304, there is seen to be a double layer of very thick hypoderm, with additional masses in the corners and with wedge-like masses here and there protruding into the tissue of the leaf. There are numerous resin-canals in the cellular substance of the leaf, each surrounded by a sheath of stereome-cells. The meristele is elliptic enclosing a branched fibro-vascular bundle, the two divisions of the strand being separated by a parenchyma of thin walled cells.

This is the same structure that occurs in *P. Laricio* and all the forms of it which we have examined.

The cones sent by Mr. Bierbach, one of which is represented in fig. 95, p. 304, measure about 8 cm. long by 5 cm. in greatest breadth just above the base. They are sessile, deflexed, ovoid elongate, conic, of a pale yellowish-brown colour. The apophyses measure about 1 cent. across at the broadest part; they are shining, somewhat convex, with a transverse keel and four or five radiating raised lines. The umbo is mucous, or with very small, irregular, blunt projections, rhomboidal, light brown, shining, placed in a slight depression. The elongate ovoid seed measures (with the wing) 25 mill. The wing is apical, obliquely oblong obovate, membranous, with a few vertical coloured wavy stripes.

There is no doubt that this, whether it be looked on as a species or merely as a variety, is a very distinct form, amply worth cultivating. Its leaf-structure would lead one to infer that it was well suited to resist wind, and therefore a suitable tree for growing in mountainous countries of temperate regions. We have no information as to the quality of the timber.

* *Pinus Heldreichii*, Christ, in *Transactions of the Nat. Hist. Soc. of Basel* (1863), Part III., vol. iv., p. 11. Leaves 2½ c. to fully 3 c. long, narrower than 1 m. The branches very thickly clothed downwards (persistent for five years [?]). Cones 2½ in. long, 1½ in. wide, long and conical, much narrowed from above, double (in pairs), in Herb. Boissier, set horizontally, sessile. Apophysis immature, finely fluted, pleated crosswise. Umbo of a totally different nature from that of *Pinus Pinaster*, set in a hollow, the edge of which is raised like a puff; from above downwards is a small, smooth and sharp mucro, bent like a hook, or recurved. This, as well as the habit and habitat, cause the species to approach, in all essential points, to *P. montana*, Mill. From this it differs in dimensions and the shape of the cones. The colour of the latter is purplish-brown. It is a very interesting species, which fully justifies itself as an intermediate form between *P. Pinaster* and *P. montana*. *Endlicher*, Synops. 149, placed these last two immediately together. It is a true alpine plant, found by Heldreich, July 31, 1851, on Olympus (Thessaly) with *Pinus Laricio*, *Abies Apollinis*, and *Fagus sylvatica* and described by Herr Boissier as *Pinus Pinaster* Alton, vulg. ζεμωγαλ &c.



FIG. 94.—*CHRYSANTHEMUM INDICUM*: WILD CHINESE PLANT COLLECTED BY DR. HENRY IN ICHANG. (SEE P. 301.)

accessible, we append, by Mr. Bierbach's kindness, a copy of the original Latin description, which in some points seems obscure.*

On stony and rocky ground, says M.

liarities are not met with in the Austrian and Bosnian specimens of *P. leucodermis*. Owing to these above-described characteristics, *P.*

vetustis e basi lata, plana vel subrotundata obtuse conicis, apophysi valde nitida umbone prominulo vel interdum plano-truncato; bracteis in basi strobilorum linearilanceolatis, fuscis, anguste albo marginatis, attenuato-acuminatis, margine sparsim ciliatis, squamis ovato lanceolatis, apice fimbriatis, fimbriis liberis. Ala seminis ex basi obliqua oblongo-semiorbicularis, semen ala sua 3—4 plo brevior.

Habitat supra Malakasi Lygos et Dakimi in Pindo valde sparse et parca ad Nezeros in Olympo Thessalo. A. *P. leucodermis* (Antoine Oest. Bot. Zeitschr. 1861, p. 306). G. Beck emend. in *Fl. Südbosn. et angr. Herzog.*, p. 37, differt cortice toroso, ramis (in arenosis et petrosis) interdum horizontaliter patentibus vel reflexis (fere pendulis); foliis anguste canaliculatis, longioribus, vaginis longioribus basi duobus squamis gibbosis instructis; strobilis flavidis, nitidis, apophysis forma marginatis [?], attenuato-acuminatis, margine ciliatis, squamarum forma et alis notis.

A. *P. Laricio*, Poiret *Dict. Encycl.*, v. p. 339 = *P. Palladiana*, Lam., *Pin.* ed. 2, p. 11 (1828). differt foliis pallide viridibus, facile profunde canaliculatis, breviter acuminatis; amentis masculis ovato-oblongis, medioeribus; strobilorum apophysis inaequaliter rhomboidea, ejus pars exterior rotundata, pars interior e basi truncata vel rotundata triangularis, 1—2 sileis bilateralibus impressa, umbone luermi, prominulo; ala semine 3—4 plo brevior et alis notis.

* *Pinus pindica*, Formanek.—Arbor 19—20 m. alta, cum coma e basi lata ovata vel obtuse conica; cortice toroso, pallide cano vel cinereo; ramis erecto vel horizontaliter patulis, interdum reflexis. Folia bina ex eadem vagina, pallide viridia, nitida, breviter acuminata, polynervia, rigida, scabrida, intus profunde et anguste canaliculata, extus convexa, margine cartilagineo-subdenticulata, 10—20 cm. longa, vagina foliorum juniorum angulato rugosa ex squamis margine breve fimbriato-ciliatis composita, basi duobus squamis spathaceis gibbosis instructa, in parte inferiore rufescens, in parte superiore argentea. Amenta mascula rufula, in spicam capituliformem foliis junioribus pertusam congesta, ovato oblonga; bracteis ovato-lanceolatis vel lanceolatis, longe acuminatis, fusco-nigris, margine scariosis et breviter fimbriato-laceratis obdita; strobilis junioribus sessilibus, ovato-conicis vel oblonge ovato-conicis, flavidis; strobilorum juniorum squamis oblongo ovatis, apice rotundatis, intus flavidis, extus fuscis, papilloso-scabridis, apophysi flava, convexa inaequaliter rhomboidea, umbone cinereo, ex basi rhomboidea conica, inermi, rarissime erecto armato; strobilis adultis oblongo-ovatis vel late ovatis, strobilorum adultorum apophysis pars exterior rotundata, pars interior e basi truncata vel rotundata triangularis, 1—2 sileis bilateralibus impressis, eorum umbo luermi, prominulus; strobilis

Mr. Bierbach, who makes a specialty of collecting seeds, &c., of plants of the Balkans and neighbouring territories, can, we believe, supply seeds of this novel form. Maxwell T. Masters.

NOTES FROM PARIS.

THE GENERAL AGRICULTURAL CONGRESS.—The second part of the General Agricultural Congress, dealing with the live-stock of the farm, was held on April 16 in the Galerie des Machines in the Champ de Mars. The horticultural exhibition occupied the large Salle des Fêtes arranged in 1900 in the centre of the said Gallery.

The horticultural exhibitors were not very numerous, nor did they show great novelties. There were Azaleas, Rhododendrons, and flowering shrubs, from MM. Croux, Lelieux, &c.; seasonable flowers from MM. Vilmerin-Andrieux, Cayeux, Le Clerc, Ferard, &c. There were two large collections of Orchids, one from M. Magne, of Boulogne-sur-Seine, was composed of various known species and hybrids; the other, from M. Maron of Brunoy, was formed of two fine hybrids raised by him; of *Laelio-Cattleyas* Henry Greenwood, *Highburyensis*, Louis Chaton, *callistoglossa*, *Imperatrice de Russie*, Captain Percy Scott, &c.; of *Sophro-Cattleyas*, *Cattleyas*, &c. There was some fine fruit.

SPRING SHOW AT PARIS.

The spring exhibition will be opened on May 21, in the houses of Cours la Reine, where the Horticultural Congresses were held in 1900. The two houses will be connected by a large awning, which will form the principal entrance to the exhibition. To the right and left of this awning, two large tents will form vestibules, and be filled with Roses. Each of the houses ends in a dome. One of these will be reserved for colonial plants from the gardens at Nogent, under the directorship of M. Dybowski; and the other will be hung with paintings of flowers.

M. DE LA DEVANSAYE'S LIBRARY.

M. de la Devansaye, the well-known plant grower, who died last year, bequeathed to the Horticultural Society of Marne-et-Loire, of which he was president, his valuable horticultural library. This is now installed, thanks to the Municipal Council of Angers, in the Musée de Paleontologie. The library includes a set of the *Botanical Magazine* from 1793 to 1899, *Paxton's Magazine of Botany*, sets of *Lindenia*, *Rumphia*, *Reichenbachia*, and other well-known books. G. T. Grignani.

AN IRISH BULB-FARM.

SOME fourteen miles north of the city of Dublin, is the now decayed, but once famous fishing village of Rush, built on a wind-swept promontory of about 600 acres. The surface of the land is undulating and the soil extremely light, varying apparently from light loam to the purest of sand. Along the coast the country is bare-looking in the extreme, with scarcely a tree, and no appearance of water, save the salt sea beyond. Yet here, all but hidden by sheltering sod-dykes and brushwood fences, may be found, at this particular season of the year, one of the most delightful spots imaginable, a resplendent oasis, amid the April fields still bare and brown since the labours of early spring. For here is the rapidly developing bulb-farm that is giving this out-of-the-way coast village its second chance of becoming famous.

The "farm" is about two miles from the railway station, and the walk there is very

pleasing. Approaching the village from the south-west, we come within sight of the sea, and what a magnificent view! Between the highway and the sea, its breaking waters forming a white fringe along the whole shore, lie miniature fields, sand-hills, and white-washed cottages, while eastward, three miles away, rises the peaked island of Lambay, and to the south, "Ireland's Eye," lying low in the water, with the granite hills of Howth rising high and clear at the northern rim of Dublin Bay.

THE DAFFODILS.

Turning to the left on our reaching the village, we soon find ourselves within the simple inclosures of the farm. At first we confess to a feeling of disappointment, as there seems very little to see; a big garden divided into plots separated from one another by hedges of Privet or Laurel, but no Daffodils! At the bottom of this wilderness of hedges is a high sod-bank, running east to west, and over the top of this one could see the head-gear of men and women, evidently pilgrims like myself to the shrine of pale Narcissus. Instead of searching for a gateway, we impatiently climbed the wall of earth, and there stand transfixed with interest and delight at the scene spread out immediately in front of us—what a feast of colour! undulating lakes of yellow with bars and squares of white, and every intermediate shade between. Quite close to where we stand, and lying between us and the unclouded sun, is a field of "Sir Watkin," made glorious by the light shining through its vast sheet of translucent petals, while fairly below and in front of us is a charming bed of cernuus, white, Colleen Bawn, and other Narcissi of the moschatius type. From where we stand, a good general view may be had of this part of the farm. There seems to be here about ten acres devoted to the culture of Narcissus; the farm is divided up into about one-acre plots with separating fences of hurdles and brushwood, the object, of course, being to provide shelter from the wind. In the north and north-east is a narrow plantation of trees, that must also act as a wind-break on that side of the farm. It is the west wind, however, that is most dreaded here, and special precautions are taken to moderate its influence. The plots run north and south, and each plot is cut in two by a path running in the same direction. The bulbs are planted in rows, and every square foot of soil is occupied.

THE SYSTEM OF CULTIVATION.

In conversation later on in the day with Mr. James Robertson, I learned some interesting facts concerning the methods of bulb-farming here adopted. The plan of cropping follows, as a rule, a four course system of rotation. For Narcissi, a light or sandy loam is selected, and this is very heavily manured with cow-dung once in every four years. During the fertilising year the soil is cropped with Potatoes or Peas, the second year with trumpet Daffodils, the third with those of the medium-cupped section, and the fourth with the small-cupped or true Narcissus type.

It is said that no place in Ireland has less rainfall than this district of Rush, while abundance of water rises through the soil by capillary attraction, its amount indeed being regulated by the actual requirements of the growing crops.

Concerning the immense variety of Narcissi we find here in full bloom, it will be impossible to speak other than in very general terms. Every bed is filled with healthy thrifty plants, and not a weed may be seen throughout the entire cultivated farm; but

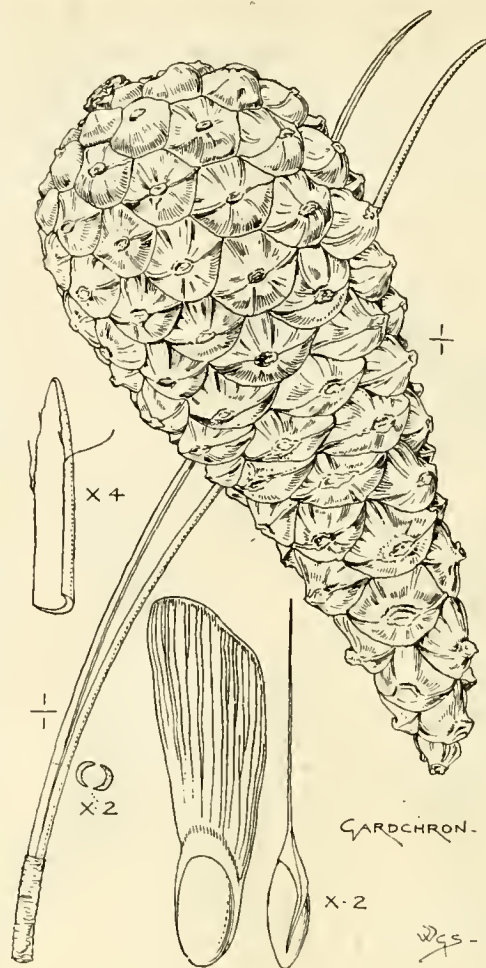


FIG. 95.—PINUS LARICIO VAR. PINDICA.
Showing tuft of leaves of real size; tip of the leaf magnified 4 diam.; cone real size; seed magnified twice.
(See p. 303.)

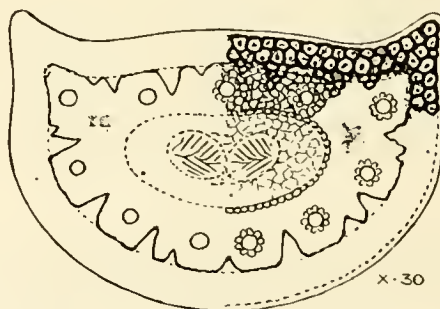


FIG. 96.—PINUS [LARICIO] PINDICA: SECTION OF LEAF.
(See p. 303.)



FIG. 97.—CONE OF PINUS LARICIO VAR. HELDREICHI.
(See p. 303.)

the thought uppermost in one's mind, as one passes from plot to plot, and from one variety of flower to another, is why this perfection of growth, this richness of beauty in these Irish-grown plants. Take for example, this broad rood of "Sir Watkin," what are the special conditions existing here that seem to give intense greenness to the foliage, apparent largeness of the blooms, increased substance to the perianth, and brightness and extreme purity of coloration to the whole flower? Some subtle reason surely; for although outside the enclosures of the farm there is no apparent evidence of unusual generosity on the part of Nature, yet this promontory of Rush for years has been remarkable for the earliness of Ireland's own vegetable, the useful Potato, and perhaps indeed the

named, because of the brilliant use they make of flaming orange-red.

Among the wide stretches of trumpet Daffodils in flower, very fine masses of *Glory of Leiden*, *Horsfieldi*, *Mrs. Walter Ware*, *Mrs. J. B. M. Camm*, *Henry Irving*, *Golden Spur*, and many more, conspicuous in the brilliancy of their display. The medium-cupped group is exceedingly well represented: *Incomparabilis*, *Barrii*, *Leedsii*, *Humei*, *Backhousei*, *odorus*, and others—a truly educational collection of types. The small-cupped section seems also to be complete in types, although all are not now showing flower; *Poeticus grandiflorus* is nearly over, while others are yet in the bud stage; but varieties of *Burbidgei*, *biflorus*, and *Tazetta*, are now in all the fulness of beauty.

manured and cropped with a vegetable every fourth year; the second year in rotation the soil is used for early Tulips, the third for late varieties, and the fourth for white or tender sorts, or perhaps for certain kinds of *Narcissi*.

In addition to Daffodils and Tulips grown here on a large scale, *Iris* (Spanish and English), *Gladioli*, *Ixias*, and *Anemones*, are propagated and raised on the farm.

It is interesting to learn that the farm has been in existence for only eight years, and that at first the trial ground was a sandy patch of soil covering an area of about 50 square feet. It now covers over twenty acres. It is an extremely suggestive object-lesson that ought not to be forgotten by those who are interested in problems relating to the utilisation of "waste" land in the United Kingdom. *David Houston*.

NURSERY NOTES.

CINERARIAS AT FARNHAM ROYAL.

I CAN hardly conceive of there being anywhere in the kingdom a finer display of that favourite greenhouse plant, the *Cineraria*, than may just now be seen at Woodhill, Farnham Royal, Bucks. It would seem as if, almost from time immemorial, the name of James had been associated with the *Cineraria*, so long have the two been intimately connected, and certainly nowhere can the *Cineraria* be seen under finer conditions. The season's batch of plants runs to some 3,200, and as all are very sturdy ones, in 7-inch pots, and now in full bloom, it is not difficult to understand what a remarkable floral show they make.

In one respect, the usual rule in relation to sowing seed differs here, as Mr. James does not sow his seed until July, and last year it was late in the month ere it was got in. Generally gardeners sow much earlier, as they like to have plants in bloom early in and during the winter. A very common occurrence, also, is growing on in highly enriched, loose soil, and in rather large pots; then very strong, even coarse leafage results, but flower-heads are relatively smaller, and rarely of the best quality. At Woodhill, not only is late sowing practised, but the soil in which the plants are finally got, when in their 7-inch pots, is rather loamy than rich, and it is pressed about the plants fairly firmly. That practice checks the production of strong leafage, makes growth moderately slow but very sturdy, and the flowers come of the finest form and excellence. As the primary object is the saving of seed, early winter-blooming would be detrimental to that end.

Most of the houses at Woodhill are low, light spans, and are during the winter kept rather cool than otherwise, ample air being admitted. That tends to the formation of pollen, without which there could be no seed, and also enables the bees (of which useful fertilisers several stocks are kept) to get to the flowers, and freely disperse pollen. The putting of the diverse colours into huge blocks enables the stock to be seen to singular advantage. Thus there is one house of fully 500 pure whites, then comes a big batch in another house of self blues in glorious shades, following which is a great block of purple selfs. Then come some 600 crimson selfs in most brilliant hues, and a group of lesser dimensions of magenta tint. Turning into another house, come the beautiful edged flowers, crimson coming first, some 600 in number, making a glorious show; then the purple edges, then rose edges, and finally



FIG. 98.—CINERARIA.

The small flower is that of *C. cruenta*, of the natural size, to compare with the flower of a florists' variety, also of the real size. (See p. 306.)

chief industry of its inhabitants is the growing of these early tubers for the Dublin market. So mild and equable is the climate, that Potatoes may be planted here as soon after Christmas as the weather permits without any fear of after injury from frosts. At all events, the place seems extremely well adapted to the requirements of bulb-growing, as every bed testifies by its freshness, fulness of sap, and brilliant colouring.

In walking through we noticed on different parts of the farm several of Mr. Engleheart's new seedlings in bloom. The *Lady Margaret Boscawen* with its broad white perianth leaves, and intense golden-yellow cups widening towards the rim, the whole flower bearing itself with dainty dignity; the *Brigadier* with strikingly handsome bicolor blooms; the *Lady Arnott* with its yellow, star-shaped perianth, and narrow cup of brightest orange-red, passing into yellow at the base, and forming delightful masses of flower, were evidently in their prime. The *Mrs. George F. Brooke* looked extremely pretty with its widening yellow cup, displaying a vivid orange border; while the *Flamingo* and *Flambeau* are well

TULIPS.

Another small farm of about 3 or 4 acres lying nearer the sea is used for the propagation of Tulips. Its soil is pure sand. The bright masses of colour, white, yellow, red, and variegated, fairly dazzles the eye in the bright sunshine. Here we see Irish-bred bulbs growing side by side with Dutch bulbs of the same age and variety. It is claimed for the home-grown bulbs that the flowers are earlier, bigger, and better coloured than the Dutch, and what we see here apparently establishes the claim. Some interesting facts concerning the grading of bulbs were learned. It seems that the bulbs are classified according to size and vigour into seven classes:—(1), *Spawn*; (2), large offsets; (3), small round No. 2; (4), small round No. 1; (5), large round No. 2; (6), large round No. 1; (7), breeders, every variety of Tulip grown here (a hundred or so varieties are handled) are so divided and kept separate in the beds, a detail in the culture requiring extreme care, good judgment, and orderly habits.

For Tulips, a pure sand is selected. As in the case of *Narcissus*, the ground is heavily

the most beautiful blue edged forms. No description can convey an adequate conception of the floral show seen, or of the splendid quality of the flowers. Whilst the whites have what now may be regarded medium size, in all the others the flowers generally run very large, yet have fine form and good substance. Many flowers range from $3\frac{1}{2}$ to 4 inches in diameter (see fig. 98, p. 305). Really they are large enough for anything, although there are some people who seem desirous of getting even greater size. Out of the great number of plants few exceed 12 inches in height. What remarkable contrasts do they present to the stellata cruenta strain, grown in a remote house, pretty enough in their way; and the blue-tinted Lady Thiselton-Dyer is perhaps the best of all. But still how poor relatively are they as decorative flowers! If there be effort to engraft the fine florists' forms on to these branching types, both are spoiled. Let tastes in Cinerarias be what they may, few could walk through the respective houses at Woodside without being impressed with the brilliance and beauty of the florists' Cineraria. A. D.

The Week's Work.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bickton, East Budleigh, Devonshire.

The Peach.—Recent cold winds have prevented these trees making satisfactory growth, and where sufficient protection was not afforded, blister or curl of the leaf may have set in. Curled leaves should be picked or cut off as soon as detected. Unless the weather be again unseasonably cold, the protective material may now be removed, leaving wooden copings for another ten days, so that no great check be given the trees. The fruit being set, should green or black fly prove troublesome, an insecticide may be used on the trees; tobacco-juice, quassia extract, or "Abol," are all good for the purpose, if used of the proper strength. Apply such insecticide at about 5 P.M., and syringe the trees with clean water on the following morning before 9 A.M. In warm, fair weather, the trees may be syringed with water from the garden-engine two or three times a week at about 4 o'clock in the afternoon; but if the nights are cold, carry out the operation in the early morning, and rather gently, as the foliage being young, it is very soon damaged if care is not exercised in this matter.

Plums have set well in this locality. Although disbudding is seldom practised, it will repay the gardener to remove superfluous growths from last year's wood. Many of the spurs are often too much crowded to admit the necessary amount of light and air required, and need thinning. Keep a sharp look-out for the maggot which infests the points of the shoots, as in the case of the Apricot, squeezing any that are found between the finger and thumb. Young trained trees require similar treatment in respect to disbudding and training as that recommended for Peaches in a previous calendar. Extra-vigorous shoots, whether on young or old trees, should be pinched when 6 or 8 inches in length. Remove with a knife any sucker growths from the base of the trees.

The Pear-Midge.—This insect is supposed to attack early-flowering more than later varieties, but for the past two seasons I have noticed that Easter Beurré and Winter Nelis have fallen a prey to this insect. The blossoms upon which they have been at work may be easily detected by their dark colour, and failing to set perfectly. These should be picked off and burned, for spraying has little or no effect on this insect.

Strawberry St. Joseph.—To have this fruit at its best late in the autumn, all flower-spikes

that appear until the end of June must be pinched off. A good crop may then be looked for towards the middle of September. Keep the plants free of runners, and afford them plenty of water at the root during spells of dry weather. Mulch with half-decayed manure.

THE FLOWER GARDEN.

By R. DAVIDSON, Gardener to EARL CADOGAN, Culford Hall, Bury St. Edmunds.

Hints on work in general.—A commencement should be made forthwith in the preparation of the beds and borders for receiving the summer bedding-plants. Early flowering bulbs as they pass out of flower may be removed carefully, and laid-in on a north border, a position where they will not become matured prematurely, first taking the precaution to label each variety anew in order that each kind and variety may be recognised when lifted for storing. Having cleared the beds, let them be afforded a good dressing of thoroughly decayed vegetable matter, including a small quantity of leaf-mould. If the soil is very dry, apply water heavily before and after being dug, and thoroughly pulverise it as the work of digging proceeds. All bedding-plants standing in pots, viz., Marguerites, Pelargoniums, Brompton and Intermediate Stocks, should be afforded a sprinkling of guano or Standen's manure or manure-water twice or thrice weekly until they are planted in beds and borders. Should aphides appear on climbing Roses, as they will do in warm positions, syringe the foliage immediately with an insecticide of sufficient strength to kill the insects without causing injury to the tender foliage. Thin out the weak shoots of Chimonanthus fragrans grandiflora, and stop strong shoots just beyond the second joint, from which point shoots of a suitable size will result, which when well ripened will be productive of quantities of flowers.

Pinks.—The flower-buds are now becoming prominent, and in the absence of abundant rains, water must be applied pretty copiously, more especially if the soil is light and it dries quickly; and if no mulch has as yet been applied, let no time be lost in applying one of half-decayed manure, and when the flowers begin to expand, afford a top dressing of a suitable plant-fertiliser at the rate of 3 to 4 oz. per square yard, and afford water soon afterwards. The flowers of the Pink are always appreciated for their delicious balsamic fragrance whether cut or left on the plants, and in order to prolong their season the beds should be shaded from bright sunshine with serim or tiffany.

The Double-flowered Narcissus poeticus.—In these gardens the plants show well for flower, and in order to obtain fine results we apply water in abundance, and a sprinkling of chemical manure. The tips of the flower-sheaths may be clipped off with a pair of scissors, which will enable the blooms to develop satisfactorily. Shade may be applied as in the case of the Pink, so as to prolong their season.

THE ORCHID HOUSES.

By W. P. BOUND, Gardener to J. COLMAN, Esq., Gatton Park, Reigate.

Cypripedium niveum, concolor, and bellatulum.—These are among the species most difficult to cultivate, the usual mistake made being in keeping the plants much too dry, whereas my experience teaches me that there are few species that require more moisture than they. Pot them in a compost consisting of good loam two-thirds, good peat one-third, afford ample drainage, and insert some pieces of soft brick among the compost, up to within half an inch of the surface. Hang the plants in a healthy, moist hothouse, and apply water freely for the greater part of the year. At Gatton the plants are immersed in a vessel of water, and they seem to benefit by the treatment, and by being sprayed on bright days overhead. Do not repot unless the compost has got into a bad state, or the plant is unhealthy, but pick out as much of the old

compost as is possible without injury to the roots, and top-dress with the compost named above.

Oncidium Forbesii, varicosum, Rogersii, and crispum.—The plants are starting into growth, and may be top-dressed or repotted as may appear necessary. A suitable compost consists of equal parts of Orchid-peat and chopped sphagnum-moss. These species of Oncidium can be very successfully grown when suspended in the cooler part of an intermediate-house, and much benefit accrues to them from frequent overhead syringing whilst growing, a season at which the plants must not lack water at the root.

Oncidium Marshallianum and O. curtum.—These species should receive water freely, the flower-spikes being now pushed up. The chief points of cultivation are identical with those pursued with other species.

Oncidium Kramerianum and O. papilio.—The plants will have now begun to make growth, and the repotting of any that need it should be carried out. These plants may be sprayed overhead whilst growing with good effect, and be suspended in the stove Orchid-house. Weakly plants of these species should not be allowed to flower, and on those plants of which the spikes are not strong, the flower should not remain for any great length of time.

Woodlice.—These insects commit much havoc in Orchid-houses, and are not readily caught, the hiding-places being so numerous. I would advise cultivators to immerse the pots gradually in a vessel containing tepid water, by which means the insects are driven to the surface of the compost, when they can be captured. It is a good practice to keep baits of hollowed-out halves of Potatoes about among the Orchid-pots and on the compost, examining these every morning and evening.

FRUITS UNDER GLASS.

By JAMES WHYTOCK, Gardener to the DUKE OF BUCKLEUCH, Dalkeith.

Early-forced permanent Vines.—The vinery, if the Grapes are ripening, should be afforded air night and day, a small amount of ventilation being allowed during the night. On cold nights keep a temperature of 60° by means of artificial heat, and by day with sunshine 80°, increasing the amount of air as the warmth rises, but affording not any at the front of the house. Vine borders consisting of retentive soil will need no more water, in the case of Black Hamburgh, until denuded of fruit. Foster's Seedling is a Grape that will keep in good condition for a long time on the Vine if the border is kept moist. Borders made of light or very porous soil may require clear water now that the Grapes are coloured, but fire-heat must then be used to dry the air. Although the vinery paths are frequently damped, red-spider may show itself, and it will be prudent to put a coating of flowers-of-sulphur on the hot-water pipes.

Earliest Muscat of Alexandria Grapes will be one month later than Black Hamburghs in ripening, when started at the same date. The border may be afforded manure-water. On cold nights keep the warmth at 70°, and on mild ones at 75°, letting the warmth rise to 90° by day with sunshine, and keeping a genial temperature in the vinery. Shorten all lateral shoots to one bud, so as to allow the light to reach the fruit and to impart to it colour and sweetness.

Succession Vineries.—The Vines are now in full growth and the bunches set; and varieties such as Alicante and Gros Colman will require severely thinning forthwith to enable the berries to swell to a large size, and keep in good condition for a length of time. Where there is much thinning, a great deal of perseverance is needed to keep up with the work. In the case of Muscat of Alexandria, do not begin to thin the berries until it is seen which berries are going to swell. Young vigorous Vines throw large bunches, but they must be cropped lightly, or they will be ruined past recovery; better therefore allow three small bunches per Vine, and finish them well, than

three large ones which are not fit to be placed on the table. Stop laterals carrying fruit at the second bud beyond the bunch, shorten sub-lateral shoots to one bud, and encourage the formation of large foliage of a leathery texture. The border being in the right state, and the roots on or near the surface, sprinkle Thomson's Vine Manure at the rate of 2 oz. per square yard, and apply water with a rose-can, and a few days afterwards apply weak manure-water from a cowshed. On cold nights keep the temperature at 60° for Black Hamburgh Vines, and at 70° for Muscat of Alexandria—a little more on mild nights—and by day from 80° to 90°.

The Planting of Vines.—From the present time till the beginning of June is the best time of the whole year in which to plant a viney. A border 6 feet wide, half of it being inside the viney, will be wide enough at the first. If the district is a cold one, or the subsoil is poor or not favourable, make the bottom of the border on a level with the general surrounding surface, putting in abundance of drainage materials, and whether made above or under the surface, making it 2½ feet in depth. Turfy-loam from, if possible, an old pasture, putting it in freshly cut lumpy pieces, mixing some lime rubbish, a spadeful of bone-meal, and a spadeful of Vine-manure, to each large wheelbarrowful. When making the border, lay the soil on in thin layers, and ram it firmly; and use finer soil in which to plant. The Vines being prepared as formerly advised on turves from one-year-old "cut backs," or from Vine-eyes of this year's striking, will need merely to be laid on the surface of the border, and covered with finely-chopped turf well mixed with Vine-manure, finishing with a mulch of fresh horse-droppings, and a good application of tepid water. Let a fairly high and moist temperature be maintained in the viney.

PLANTS UNDER GLASS.

By J. C. TALLACK, Gardener to E. MILLER MUNDY, Esq. Shipley Hall, Derby.

Camellias.—Plants the new growth of which has reached its full length are then just in the right condition for repotting, and will scarcely feel the check if the operation be carefully carried out, and the plants shaded for a week or two afterwards. If the soil is in any degree sour or in bad condition, and the roots decayed at the points, remove some of it with a pointed stick, and cut back the tips of decayed roots. Camellias should be potted firmly in turfy-loam of good quality, but as the leaves made by plants potted solely in loam are usually of a pale tint, it is advisable to mix some hard peat with it. Syringe the plants freely two or three times a day after repotting until established, and afterwards in the evening following dry warm days.

Azaleas.—Plants of *A. indica* which have gone out of flower and are making growth may be repotted if they require it. In preparing to repot these, when there is no wish to increase the size of the pots, I do not approve of the method of reducing the size of the balls by picking out the soil with a pointed stick, but would rather cut away with a sharp knife the outside of the ball, clean-cut roots soon putting forth new roots. After repotting, grow the plants for a while in a warm house, syringing the tops freely. Plants which are of ungainly shape, and those of which the growth is weak, may be pruned severely, and placed in an intermediate-house, and be well syringed frequently. The plants will form numerous shoots, requiring that the worst placed and very weak ones be rubbed off whilst in the succulent stage. Azaleas that are cut back severely seldom produce flowers the next year.

Ericas.—As soon as the plants have passed their best, let them be pruned back more or less according to the species; but, speaking generally, those which are soft-wooded may be cut back the harder. Each shoot should be taken separately and cut back to the desired length, but not into hard, leafless wood. Soon afterwards the plants may be repotted firmly

in a mixture of hard turfy-peat and sand carefully mixed together, making use of clean pots, which must be most carefully crocked.

Euphorbia (Poinsettias).—Those plants of *E. pulcherrima* from which shoots for cuttings will be taken should now be pruned back to the firmer wood, and placed in an intermediate-house to break, being afforded for the present scarcely any water at the root, but freely syringed instead. To apply much heat and moisture is not the right kind of treatment, and results in flabby cuttings, that take a longer time in forming roots.

Hippeastrums.—Plants which have flowered should be afforded genial conditions, so that growth may be fully developed, and full light may be afforded, all shading being withheld, and be afforded water at the root in moderation, any excess of water invariably leading to an attack of bulb-mite [?]. If the bulbs are plunged in a tan bed, no harm will accrue if the roots get through the hole at the bottom or over the rim into the tan, and to plunge them reduces the labour of applying water.

Tropaeolums.—As wall coverings in a sunny situation under glass some of the *Tropaeolums* are very excellent plants, and the variety known as *Vesuvius* cannot be excelled for an autumn display. Cuttings of young shoots may now be taken and struck on a hotbed, and when well rooted they may be planted either in a raised border consisting of sandy loam and leaf-soil, or in pots. The effect, if the light in the house is sufficient, is as brilliant as that afforded by good plants of *Nasturtium Flame*, *T. speciosum*, &c., out-doors in the summer season.

THE KITCHEN GARDEN.

By T. TURTON, Gr. to J. K. D. WINGFIELD DIGBY, Esq., Sherborne Castle, Dorset.

Tomatos.—Plants intended for fruiting on warm walls, warm borders, or in the open quarters in southern gardens, being established in 48's and still standing in warm houses, should forthwith be removed to cold pits or garden frames, these being closed early in the afternoons for the first few days, and afterwards afforded more and more air till sufficiently inured as to be capable of full exposure by day. After being fully exposed for a few days, the plants which are to be placed against walls, unless the weather is very unfavourable, should be planted, for the reason that the soil is warmer than the air, and although they may not make quick growth for some time, the roots will be growing, and top growth will be hastened when the weather becomes warmer. The soil will need no manure, the plants not requiring any before the fruit commences to develop, at which stage a mulch of short stable-dung may be afforded. In the south the Tomato does well in ground that has carried spring Cabbages, a course that I would strongly advise. The Cabbages, stumps, and rubbish being cleared off the ground, let it be dug, and set out the Tomato plants in rows at 3 feet apart, and 18 inches in the row. The plants should be confined to a single stem. Against walls, the plants may stand at 18 in. apart, and the base of the stem 9 in. from the wall—a distance that admits of a stake being placed between the plant and wall without disturbing the ball, the stakes being secured at the top with a 2-inch holdfast. These holdfasts are a comparatively new invention, and are usually sold under the name of "vine-eyes." If the walls are wired, stakes are not wanted, and the plants may be set closer to the wall. The plants should have stakes 2 ft. long placed to them whilst they are standing in the cold pits, which does away with the necessity of immediate staking.

Spring-sown Onions.—Keep these quite clear of weeds by hand-weeding, and on retentive soils it is best to choose dry weather for the job, the trampling then doing no harm if the gardener is careful. After hand-weeding the rows, pass a Dutch-hoe between them, and continue this very necessary operation when-

ever required whilst the plants are small and not so easily injured.

Cabbages and Cauliflowers.—Plants of these raised on a warm border from seeds sown in the month of March being now fit for setting out, the work should be carried out in showery weather, before the plants become drawn. Plant white Cabbage at 21 ins. from row to row and 15 ins. in the row, and red Cabbage at 2 feet apart each way. Pearl or other intermediate Cauliflower should be planted at 2 feet from row to row and 18 inches in the rows. But Autumn Giant and others of large growth need a space of 30 inches from row to row and 21 inches in the row. For private families it is a mistake to have the soil very rich for Autumn Giant, heads of middle size being better liked. In warm soils a northern aspect answers better than warmer ones. This planting will form a succession to those that were wintered in frames or under hand-glasses. Afford water from a rose-can to settle the soil about the plants, and prevent much check to growth being given. As the autumn and early spring-sown Cauliflowers turn-in, as a rule, before we get high winds to disturb them, it is unnecessary to earth-up the plants. Make another sowing of Autumn Giant for planting on sheltered borders for late autumn supply.

THE APIARY.

By EXPERT.

Useful Hints.—The cold weather has been most unfavourable for the bee-keeper, the bees having been kept in the hives, and as a consequence, stores will be decreasing, and the stocks not nearly so strong as they were a week ago. A few extra wraps may be necessary, and feeding will still be called for, in order to keep the bees breeding. "Do not let the bees starve," should be the bee-keeper's motto, and keep the bees strong. The bees should be fed on very thick syrup made from the best sugar, with a little honey added, to induce the bees to take it regularly. Care too must be exercised in making the syrup that it does not burn to the saucepan, this being at all times injurious. The various operations should be carried out when the weather is fine, cold harsh winds causing injury to the brood. Let the hives face the south-west, but do not move any hives now that contain bees, unless it be at the rate of one foot per day. Hives not furnished with legs should be kept at about eighteen inches to two feet from the ground and firmly planted down to prevent the wind blowing them over.

ROTHAMSTED AND ITS PRESENT OWNER.

The manse of Rothamsted is situated in the county of Hertford, and adjoins and is mainly included in the parish of Harpenden. It has been in the possession of the LAWES family since 1623; in that year it was purchased from the owner, EDMOND BARDOLF, for JOHN WITTEWROUGE, a minor, whose ancestor, JACQUES WITTEWROUGE, had about 1564, on account of religious persecutions, left Flanders and settled in Stantonbury, in Buckinghamshire. JOHN WITTEWROUGE was first created a knight and afterwards a baronet by CHARLES II. In the absence of male heirs, the baronetcy lapsed, and the LAWES family succeeded to the estate by marriage with MARY BENNET, a great-granddaughter of JOHN WITTEWROUGE. JOHN BENNET LAWES, the first of the name, died in 1822, and was succeeded by his only son, JOHN BENNET LAWES (afterwards Sir JOHN), the founder of the world-renowned Rothamsted Experiment Station, who died in 1900, and was succeeded by his only son, Sir CHARLES BENNET LAWES, Bart., the present owner, to whom his Majesty the KING has now granted licence and authority to take and use the surname of WITTEWROUGE in addition to and after that of LAWES, and also to quarter the arms of the WITTEWROUGES with his own.

EDITORIAL NOTICES.

ADVERTISEMENT 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 the unused communications or illustrations, unless by special arrangement.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, MAY 17 { Whitsuntide Exhibition at Old Trafford, Manchester, opens, continuing until 22nd inst.
German Gardeners Society, Meeting.

SALES FOR THE WEEK.

MONDAY, MAY 12—Span-roof Greenhouse, Piping, &c., at the Bexley Nursery, Bexley, by order of the S.E. Ry. Co., by Protheroe & Morris, at 12.
WEDNESDAY, MAY 14—Palms, Begonias, Plants, &c., at 67 & 68, Cheapside, by Protheroe & Morris, at 12.30.—Clearance Sale of Stove, Greenhouse, and Bedding Plants, at Thriff Wood, Silverdale Sydenham, by order of A. Domeier, by Protheroe & Morris, at 1.
THURSDAY and FRIDAY, MAY 15, 16.—Clearance Sale of Greenhouse and Bedding Plants, at St. John's Nursery, Ravenna Road, Putney, by order of Executrix of G. Stevens, deceased, by Protheroe & Morris, at 11.30.
FRIDAY MAY 16—Imported and Established Orchids, by order of F. Sander & Sons, also Phalenopsis, 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—54°3'.

ACTUAL TEMPERATURES.—

LONDON.—May 7 (6 P.M.): Max. 52°; Min. 36°.
Wind, N.N.E., light.

PROVINCES.—May 7 (6 P.M.): Max. 51°; Isle of Wight; Min. 44°, Hebrides.

"Cyclopædia of American Horticulture."

THE fourth and concluding volume of this immense undertaking carried out by Prof. L. H. BAILEY, of Cornell University, and published by Messrs. MACMILLAN & Co., has lately been issued. We have frequently had occasion to mention the peculiarities and the excellence of this publication. Though chiefly intended for American use, and moulded by American conditions, it is nevertheless so valuable that wherever the English language is spoken there this book will be prized. It looks at things from a much more commercial standpoint than most similar productions—indeed, the main aim of the volumes seems to have been to assist not only the botanist and plant-lover, but specially the cultivator who makes a business of horticulture. With publications of this character and experimental stations scattered throughout the whole of the vast area of the States, much more is done by the authorities for the furtherance of practical agriculture and commercial horticulture than is the case with us.

The present volume contains some introductory matter showing how the work originated, how it took shape, and how the work has been done. The *Cyclopædia* was suggested by the publication of successive volumes of the *Annals of Horticulture*, a work akin to our garden "Annals" and similar productions, but on a larger and more thorough scale.

Then a garden herbarium was formed, which now numbers more than twelve

thousand specimens. All the matter used was to be new, in the sense of being worked over specially for this particular purpose, not by mere compilers, but by experts. There was to be no mere copying, honest or otherwise. The writer of each article was expected to know of his own knowledge the subject about which he was to write. A card index, comprising some thirty-five thousand entries, was got together, including references to descriptions and illustrations of garden plants. Trade lists of about a hundred nurserymen from all the States north of Mexico were treated in a similar manner, and the names of cultivators and botanists accumulated. As a standard of nomenclature was obviously imperative, this was furnished by the *Index Kewensis*, each contributor, however, being allowed to express his own opinion on doubtful points.

The editor cites the principal works of reference which were in daily use, the library and other resources of Cornell University having been freely used. Among illustrated periodicals that were requisitioned, the editor gives "first rank to the peerless CURTIS' *Botanical Magazine*, in one hundred and twenty-five volumes, containing over seven thousand six hundred coloured plates;" the *Botanical Register*, the *Botanical Cabinet*, the *Revue Horticole*, the *Flore des Serres*, the *Garden*, and other publications, are also mentioned. "Of horticultural periodicals not containing coloured plates, the *Gardeners' Chronicle* (issued continuously since 1841) is a great store of botanical knowledge. It is full of botanical monographs of garden genera, and is a rich repository of descriptions of new species." We are grateful for this appreciation of the permanent value of the many monographs given by leading experts in our columns, as much labour, patience, and skill seem sometimes lost amid the flood of matter of more ephemeral interest. The purely botanical books made use of are also enumerated; they are, of course, those with which we are most familiar, and the value of the colonial floras and other Kew publications is forcibly shown.

The "office force" consisted of an editor and associate editor, who gave continuously four years of their time to the work, with numerous other incidental assistants and contributors—four hundred and fifty in all! Among these we are pleased to find the name of our old associate Mr. LEONARD BARRON, together with many other of our American friends and correspondents. The total number of articles is four thousand three hundred and fifty-seven, the number of species described eight thousand seven hundred and ninety-three, with three thousand six hundred and thirty-five varieties, and seven thousand four hundred and eighty-two synonyms. The total number of names dealt with in some way or another is over twenty-four thousand. The illustrations, all (or mostly) original, have been furnished by nine or ten artists.

Interesting details are also given as to the arrangement and classification of the species. All the species, so far as possible, were examined and contrasted before the description of any one was drawn up.

After this retrospect of which we have only glanced at certain salient features, the Editor goes on to hope that no new edition

will be prepared, but that the book may be left as an authentic record of American horticulture in the beginning of the twentieth century. Supplementary volumes are contemplated, nay, some are already prepared to comprise the new additions and modifications which the progress of science may render necessary.

Altogether Prof. BAILEY and his associates have conferred an enormous benefit on their country, and one of scarcely less degree on horticulture in general.

VIEW IN THE JAPANESE GARDEN, GUNNERSBURY HOUSE, ACTON.—Quite recently we published another view from a different point in this garden, and that which we give to-day (see fig. 99, p. 309) shows the unique bridge constructed in Japanese style of Bamboo, strong, light, and in keeping with the other features of the garden, the handrail being intended to be overgrown with *Wistaria sinensis*.

THE TEMPLE SHOW OF THE ROYAL HORTICULTURAL SOCIETY, MAY 28, 29, AND 30.—For the fifteenth year in succession, the Royal Horticultural Society will hold their great annual flower show in the Inner Temple Gardens (by the kind permission of the treasurer and benchers) on May 28, 29, and 30. Every year the desire of growers to exhibit increases, and the officials of the Society have a very anxious task in endeavouring to do justice to those growers who regularly support the fortnightly shows of the Society held at the Drill Hall, Buckingham Gate, and yet at the same time to encourage others to come forward. The space is absolutely limited by order of the Temple authorities; no more or larger tents may be erected, hence every new exhibitor whose entry is accepted means curtailment of the space allotted to previous supporters. The Society will issue an official catalogue, comprising a history of the Royal Horticultural Society, particulars of the meetings and exhibitions held at the Drill Hall, of the Coronation Rose show at Holland House, Kensington, on June 24 and 25, and of the fruit show to be held at the Crystal Palace on September 18, 19, and 20; also a schedule of plants, with the names and addresses of all the Temple exhibitors entered up to May 20. There will also be the programme of the music to be performed each day by the band of H.M. 1st Life Guards. The judges will meet at the Secretary's tent at 10.30 A.M. on May 28, at which hour punctually the tents will be cleared of all exhibitors and their assistants. The Fruit, Floral, and Orchid Committees will assemble at the secretary's tent at 11 A.M. sharp, and the show will be opened at 12.30. All plants for certificate must be entered on or before Friday, May 23. Address Secretary, R.H.S., 117, Victoria Street, London, S.W. A notice on a postcard will be sent to each exhibitor on Wednesday, May 21, stating the number of square feet allotted to him, and the number of the tent (or tents) in which the exhibits are to be placed. No plants can under any circumstances be entered on the day of the show.

VEGETABLES AND THE ROYAL HORTICULTURAL SOCIETY.—We have been requested to publish the following letter, which we print as we received it: "Believing that high-class garden vegetables have fully as much value in garden economy as have plants, flowers, fruits and Orchids, while the Royal Horticultural Society, that shows and meetings specially favours, and realising that to every gardener vegetables are of the highest importance, it is our desire to secure from the Council of the Society some complete recognition, and the



FIG. 99.—VIEW IN THE JAPANESE GARDEN, GUNNERSBURY HOUSE, ACTON. (SEE P. 308.)

(Photographed by J. Gregory.)

value of vegetables is now evidenced. To that end we wish to see one meeting of the year at the Drill Hall, say the first one in July and October alternately, annually devoted to a great exhibition of vegetables; and we beg you to insert this communication in your columns, that we may, through much

publicity, be enabled to learn from your many readers interested in vegetable culture their views on this subject. If they favour our suggestion, we shall be greatly obliged if each one will kindly intimate such, and send to one or the other of us on a post-card at once, that their names may be appended to a memorial

to the Council asking for such vegetable exhibition as is desired. (Signed) Edwin Beckett, *The Gardens, Aldenham House, Elstree*; Alex. Dean, 62, Richmond Road, *Kingston-on-Thames*. [Without pledging ourselves to details, we may say that we heartily concur in the principles laid down by Mr. BECKETT and Mr. DEAN.]

CORONATION FLORAL GALA IN EDINBURGH.—In addition to the combined show of the Royal Caledonian and Scottish Horticultural Societies which, as we announced a fortnight ago, will be held on July 16, Edinburgh is to have a large horticultural exhibition in the Artillery Park, Murrayfield, on June 23, 24, 25, 26, 27, and 28. A schedule just to hand contains the prizes to be offered at this "Edinburgh and Midlothian Grand Coronation Fête and Floral Gala," the Managing Secretary of which is Mr. A. T. HUTCHINSON, 7, North St. Andrew Street, Edinburgh. There are as many as 141 classes, but a large number of these are restricted to amateurs, and even to cultivators of window plants only, for the encouragement of gardening amongst working men in the city. There are some open classes, however, and others in which gardeners may compete. In addition to the horticultural show, there will be a band contest, a choir singing competition, exhibitions of horses, poultry, pigeons, rabbits, butter and eggs; sports, &c. Altogether the event is intended to be a sort of Coronation Carnival.

WEATHER FORECASTS.—We learn from a recent number of the *Journal of the Board of Agriculture* that the Meteorological Council, having in view the importance of the weather to harvesters, has arranged a special service of forecasts to be issued for their benefit from June to December inclusive. "The forecasts are based upon special telegraphic reports of observations taken at 2 P.M. at a selected number of reporting stations, and refer to the twenty-four hours from midnight of the day of issue. The forecasts are sent by telegraph to those who express a wish to receive them regularly, and who defray the cost of the telegrams. The number of recipients of these forecasts for various periods in the summer of 1900 was 129. It showed a remarkable increase over the number of applications in 1899, which only reached twenty."

"HARRISON'S HORTICULTURAL ADVERTISER OF AMERICA."—This is a new weekly paper, "strictly for the trade only," and sent "only to members of the strictly legitimate wholesale trade." From this we gather that it is not intended to compete with the other trade papers, which appeal to the retailer as well as the wholesale trader. It is likely to be very useful to the class for whom it caters.

PARKINSON'S "PARADISUS."—A copy of PARKINSON'S *Paradisus* was recently sold for £27. An account of former prices may be interesting. I have a good copy of 1656, in which a former owner has written "Bought the 12th of Octob: 1662, at Bath by Noll, 18s." I have also, and value, PAMPLIN'S *Catalogue*, which he published when leaving London in 1862. In it are three copies priced 8s., 10s., and 10s. 6d. respectively. Henry H. Ellacombe, Bitton.

SOLDIER GARDENERS.—The British soldier as a rule knows little about gardening, but the extraordinary circumstances under which he finds himself in South Africa is making him a tiller of the soil surrounding his blockhouse. In addition to the quantities of seeds sent out by Messrs. CARTER & Co., His Majesty's Secretary of State for War has approved of the shipment of some thousands of copies of their book of *Gardening Instructions for the Colonies*, so that Mr. THOMAS ATKINS may learn the art of growing the vegetables and flowers of his northern home by simple but correct methods on the veldt.

THE NATIONAL DAHLIA SOCIETY'S schedule of prizes to be offered at its forthcoming exhibi-

tion on September 2 and 3, has been issued. The show will be held at the Drill Hall, in conjunction with a meeting of the Committee of the Royal Horticultural Society. The Hon. Sec. is Mr. J. F. HUDSON, M.A., Gunnersbury House Gardens, Acton, W.

CLAES V. LINDEN.—M. CLAES writes to say that the note published by us is "inexacte," but as the case has been dealt with by the Brussels Court of Appeal, we must decline to insert any further notes on the subject.

A NEW ALPINE FLORA.—*Alpen-Flora für Touristen und Pflanzenfreunde*, is the title of a new publication, useful to amateurs, by Dr. JUL. HOFFMANN. It is to be issued in parts, with many coloured plates from water-colour sketches by HERMANN FRIESE. The first "lieferung" is very attractive, especially to those for whom it is specially intended. The publication is issued from Stuttgart, Verlag für Naturkunde (Dr. JUL. HOFFMANN).

"IN MY VICARAGE GARDEN, AND ELSEWHERE."—Canon ELLACOMBE is a delightful companion and a trustworthy instructor. The papers now reprinted are mostly familiar, but they are amply worth reading again. The Vicar walks and talks with us in his garden from spring to winter. He shows how much of interest there is in the meanest weed that blows, as well as in those that are "so lovely fair." He "button-holes" us in the rock garden, gossips at the railway station, accompanies us to the alpine pasture, talks of drugs, of plant-names, of perfumes, and to show his versatility, treats us to a "Part" on Switzerland and SHAKESPEARE. In the latter connection, it is interesting to learn how little the great dramatist has to say about either dogs, tobacco, or architecture. This last chapter might be thought by some to be rather suggestive of the padding, to use no harsher term, which fills up so many of the popular garden books of the day; but the works of the author of *My Vicarage Garden* are not to be mentioned in the same breath with these productions.

BOTANICAL WALL-DIAGRAMS.—We have received from the Society for Promoting Christian Knowledge a set of drawings of common plants suitable for hanging on the walls of school rooms. They are rather too small to be seen at a distance, but in the teacher's hands, together with the actual specimens whenever possible, a good deal of useful information can pleasantly be given.

A SPECIAL CORONATION ROSE SHOW has been arranged to take place at Sidcup, on the 3rd of July, in honour of the King and Queen. The show will be incorporated with a grand gymkhana. The schedule of prizes now before us bears miniature photographs of the King and Queen upon the cover. Particulars of the interesting event may be obtained of the Hon. Sec., TYSON CRAWFORD Esq., Arundel Lodge, Sidcup.

THE NORTH PECKHAM AMATEUR CHRYSANTHEMUM SOCIETY will hold its next exhibition at the Camberwell Baths on November 5, 6, and 7. Printers, publishers, and writers, are the principal patrons of this strictly urban Society, that manages to obtain an interesting exhibition of plants and flowers cultivated within a radius of about 2 miles.

"FLORILEGIUM HAARLEMENSE."—We have received parts 18 and 19 of this useful publication, issued by DE ERVEN LOOSJES at Haarlem. It consists, as we have before stated, of a series of coloured illustrations of forms of bulbous plants selected as typical by the

General Society of Bulb Culture. A short history of each form is given in Dutch, French, and German. When the work is completed (though, to say the truth, so long as the propagation and improvement of bulbous plants goes on it need never be finished), we shall have a series of illustrations and descriptions which will be very valuable to the florist and to the historian of plants. Already we have an excellent instalment. The present parts are dated April, 1901, and July, 1901, respectively, but it is only lately that we have received them. The plants figured are:—

Hyacinths.—L'Innocence, tab. 52, single white; Captain Boyton, single dark blue, compact spike, tab. 55.

Tulips.—Four forms of Parrot Tulip, tab. 53; three of Tournesol varieties, tab. 56.

Crocus vernus.—Various forms of lilac-coloured Crocuses, tab. 54. The *Crocus vernus* of LINNÆUS is *C. aureus*, from which the ordinary yellow forms have been derived.

Narcissus.—On tab. 57 are shown representations of Grandee, Golden Spur, and Poeticus ornatus.

EARLY GOOSEBERRIES.—On Thursday May 1, the first consignment of the season was recorded in town from Penzance. Gooseberry picking from bushes grown in the open around Penzance commenced this week.

THE SURVEYORS' INSTITUTION.—The annual general meeting of the Institution, to receive the report of the Council and the announcement of the result of the election of officers for the ensuing year, will be held in the lecture-hall on Monday, May 26, 1902, at 3 o'clock. The prizes awarded to successful candidates, in connection with the recent preliminary and professional examinations, will be presented by the President at the annual general meeting. Notice is given that the special certificate examinations will, for the future, be held once in three years. The next examination will therefore be held in 1904. The new forestry catalogue is now in print, and copies can be obtained by applying to the secretary of the Institution.

TROCHODENDRON ARAIIOIDES, of which flowering specimens are sent to us by Messrs. VEITCH, is one of the handsomest of hardy evergreen shrubs. Its many flowered panicles of green apetalous flowers are very attractive, but were not so in the eyes of the Floral Committee in 1894, when they passed this remarkable plant over without notice of any kind; and this in spite of its undoubted beauty, and its extremely interesting structure and history. It is the occasional passing of such extraordinary plants as this one, and the conferring of certificates by the score on Chrysanthemums and florists' flowers which are sure to be superseded in a year or two, which grieves plant-lovers, and shakes their confidence in the judgment of the Committees. We gave a full description and figure of the plant in our number for June 9, 1894, p. 716. Some botanists have referred it to the Magnolias, others to the Hamamelids, others consider it near to the Araliads, which it certainly is, so far as superficial appearance goes; and the late Dr. PRANTL in *Engler and Prantl Die Natürlichen Pflanzen Familien*, iii. Teil, 2 Abtheilung, p. 21 (1891), cut the knot by referring it to an order of its own, viz., Trochodendraceæ, including with it *Cercidophyllum* and *Euptelea*.

BERBERIS CONGESTIFLORA VAR. HAKEOIDES.—Messrs. VEITCH of Chelsea send us flowering specimens of this handsome evergreen Chilean *Berberis*. It is remarkable for its nearly orbicular spine-margined leaves, and its dense

clusters of yellow globose flowers, which bedeck the whole length of the slender, wiry branches. The plant was figured in the *Gardeners' Chronicle*, May 11, 1901, p. 295, fig. 111.

PROF. MILLARDET.—It is difficult to over estimate the services to his country of this eminent botanist. Bordeaux Mixture is now known throughout the world as the most generally satisfactory fungicide. Professor MILLARDET is now retiring from his Professorship at Bordeaux—all honour be to him.

PUBLICATIONS RECEIVED.—*Proceedings and Journal of the Agricultural and Horticultural Society of India*, for October—December, 1901. This includes an illustration and description of the Waterfall Bridge, made in the Gardens last season, and transforming a spot "very jungly and ever an eyesore" into a picturesque gorge spanned by an ornamental bridge. —*The Year Book of New South Wales*, 1902. This gives accounts of the Governors and Ministries, and the Government Departments, with astronomical and meteorological notes, legal, medical, military, naval and commercial information, together with a brief history of the Colony; its progress, and present condition. An interesting and valuable volume.—*Bulletin of the Botanical Department, Jamaica*, March. Edited by Wm. Fawcett. Contents: Report to the Board of Agriculture by the Chemist, Importation of Seeds and Plants, Jamaica Oranges in English Markets, Packing Fruit in Florida, and Black Rot Disease of Ginger.—*Annual Report of the Secretary for Agriculture for Nova Scotia*, for 1901: "The development and increased interest by farmers during the past few years is more marked and manifestly greater in 1901, than in any previous year." The season opened early and favourably, but drought set in about the 1st of July. The falling off in quantity of crops was, however, fully compensated by the high prices obtained for them. Owing to a scare concerning the appearance of San José scale, an inspection of orchards was made but, most happily, none of the pest could be discovered throughout Nova Scotia.—*The Halifax Naturalist*, April. This reports the doings of an energetic local scientific society, and includes a paper by Messrs. W. B. Crump and W. G. Smith, on the afforestation of Waterworks Gathering Grounds, or, in other words, the intelligent planting and careful up-keeping of certain large areas, at present neglected. We are glad to learn that the Halifax Corporation are inclined to look favourably on a wise scheme, to which we wish all success.—From the Department of Agriculture, Victoria, Australia: *Information concerning Products exported by the State of Victoria to Great Britain*. By J. M. Sinclair. "A large export trade is being developed with the United Kingdom in Victorian butter, cheese, grain, flower, frozen meat, rabbits, hares, poultry; also wines, fruit, fruit-pulp, honey, tobacco, &c. In view of a still wider expansion of this export business, it is desirable that the British trader and consumer should be furnished with some information concerning these productions." Some interesting notes on this subject are contained in the pamphlet before us, and for full information concerning agriculture, horticulture, viticulture and stock-raising in Victoria, application should be made to Mr. Sinclair, 153, Leadenhall Street, E.C.—From the Michigan State Agricultural College Experiment Station, Horticultural Department, Bulletin No. 194, December, 1901: *Report of the South Haven Sub-Station for 1901*, by S. H. Fulton; and *Bulletins Nos. 195-196*, January, 1902: *Strawberry Notes for 1901*, and *Notes on Vegetables*, by L. R. Taft and M. L. Dean.—Dulwich Chrysanthemum Society's Eighth Annual Report and Schedule of Prizes.

HOME CORRESPONDENCE.

CASSIA CORYMBOSA AT TREGEY, CORNWALL.—I am sorry to say I have only just been able to read the *Gardeners' Chronicle* of April 26, in which I find a question put by Mr. H. Markham as to the above tree. The plant was a cutting from the beautiful shrub on the wall at Bosahan in South Cornwall. The border in which it grows is a good turfy loam of medium texture, as Mr. Markham states. I always plant sweet-scented leaf Pelargoniums in the border under the Cassia every year, and it is well manured with spent hotbed manure. The Cassia was originally planted in good turfy loam mixed with granite-sand. The south wall on which it grows is sheltered from the east by the house, which only allows the sun to get at the plant after 1 P.M. As to pruning, I find that the plant will throw out laterals of about 5 to 7 feet long each year, which I have laid-in or pruned-in to one bud just as the plant is beginning to shoot. This year has been the

most severe winter that we have had for years, and the most frost registered at Tregy was 14°. As I think I have said before, *Cassia corymbosa* is a deciduous plant out-of-doors; but the leaf takes a very long time to come off. The foliage blackens after a frost of say 9°, but the leaf does not fall till January at the earliest. The outside shoots of *Plumbago capensis* have also been cut this winter—the leaves next to the wall never come off. The plant flowered very well last year, and was looking well when I saw it a week ago. Perhaps it may interest your readers to know what also grows close to the Cassia on the walls of my house:—1, Sweet-scented Verbena; 2, *Clianthus puniceus*; 3, *Cassia corymbosa*; 4, *Lapageria alba*, a small plant only planted last autumn; 5, *Lapageria rosea*, a fine plant with very large leaves, flowered beautifully last season, 400 to 500 blossoms being out at the same time on it; 6, *Asparagus plumosus*; 7, *Rhododendrons* Countess of Sefton, and *Nuttallii*, which last has five flower-buds on it this season; 8, *Mandevilla suaveolens*, a good plant 25 feet high; and 9, *Camellia reticulata*, flowering profusely this spring. None of these plants has ever had a mat or any kind of protection against frost. *John Boscawen*.

INTERESTING STRANGERS!—I think it may be of interest to mention that I have now coming into flower, for, I believe, the first time in Europe, a most beautiful South Australian Hemodoraceous plant, *Anigosanthus pulcherrimus*. It is figured on plate 4180 of the 71st volume of the *Botanical Magazine*; but the plate was prepared from dried herbarium specimens, which had quite retained their colour, as everlastings do; it must be a most beautiful plant if like the plate. I received these seeds of it from South Australia, and sowed it. On writing to Mr. Max Leichtlin to tell him I had got seedlings of it up, he wrote in answer, "You will be a very old man if you live to see it bloom, as the late Wilson Saunders grew it for many years and never saw it bloom." As my plants are not yet two and a half years old, and are showing three spikes of flower, I do not quite understand this, and only hope it may be true to name. I sent two of my seedlings to Kew. I have just got a fine strong flowering tuber of *Ipomoea leptophylla*, the bush Morning Glory, the only one that does not climb; also a fine plant of *Scolymus hispanicus*, figured red in Sibthorp's *Flora Græca*. *W. E. Gumbleton, Queenstown, Co. Cork*.

CORONATION TREE-PLANTING.—As there seems to be a probability that a large number of trees will be planted as mementos of the coronation of King Edward VII., I might suggest that to avoid the danger of trees dying by being planted at such an unsuitable time of the year, that all those who intend to adopt this mode of commemoration should, before it is too late, secure trees that have been transplanted, and have them properly prepared and put into suitable boxes, baskets, or tubs, in a compost that would ensure a large number of fibrous roots being made before June, and by this means, and by careful planting, obviate the disappointment that would be occasioned by the death of a tree. The selected trees should be symmetrical, and well grown of their kind. Standard trees, with stems 6 to 10 feet high, and having good crowns; conifers and evergreen shrubs, 3 to 5 feet high, not too old, would be easy to handle, and would probably get over removal and transplanting better than larger ones. A suitable kind of box or tub would be one of which the sides are removable, which could be easily made by running an iron rod made with a head at one end and a screw at the other, with a nut to fit it on two opposite sides, and thus keep the box together. When planting, remove the nut and the sides, and push off the tree from the bottom. *H. Havelock, Merie Moor Nurseries, Downfield, near Dundee*.

THE HORTICULTURAL HALL.—The idea of your correspondent "T. D. E." (p. 277), for raising money to build a hall, seems to me deserving attention, as by his scheme of local

collectors every district might be thoroughly worked. His question, "Ought not gardeners of subscribers to be admissible at a half-guinea?" is also one that I should like to see the Society take up. For some years at least, the Royal Horticultural Society of Ireland have admitted professional gardeners as members at a yearly subscription of a half-guinea, and if the Royal Horticultural Society could see its way to do the same, doubtless many gardeners would become members who cannot pay one guinea annually. *J. G. W., Bessborough, Co. Kilkenny*. [Our correspondent overlooks the fact that any gardener can become an associate on payment of half-a-guinea. Ed.]

SPORTING TULIPS.—I am sending you a few specimens of what were single early Tulips. I first planted them in my garden in 1898, and up to last year they bloomed as single Tulips, but this season every one of them has become double; in many the number of pistils has been increased as well as the stamens and petals. I am sorry that the treatment they have received has not been carefully noted. The bed in which they are growing this season was formerly planted with Carnations, and before that the Tulips were grown in the ordinary fashion and taken up every season except one, during which they were left in the ground. Some eight or ten varieties (over 100 bulbs), have behaved in this manner. It would appear that the effect is due to some treatment received a season or two ago, and is not due to excess of manure in the soil in which they are now growing, for similar varieties purchased two seasons ago and planted in the same bed are single as usual. The varieties which have become double are Keizer's Kroon, Pottebakker, white; Artis, Spaendonck, Vermilion brilliant; Wafen van Leiden, La Grandeur, Maes, and some others. Have you met with any similar case of doubling which has affected Tulips of one particular season's growth? *John Percival, Wye College, Kent*. [This sudden wholesale change is what Prof. De Vries would call "mutation," provided the results prove constant, which has to be proved. Peyritsch and others have considered that the doubling is due to the irritation set up by mites or by parasitic fungi, but we do not believe in the presence of either in the flowers before us. Ed.]

DAFFODIL PETER BARR.—In reference to your illustration on p. 295, I may say that a Daffodil-flower exactly similar to that figured, but slightly larger (I took the dimensions of both), was exhibited at the Birmingham show on April 25 by Messrs. Pearson, of Lowdham. My impression is that Mr. Barr's specimen of this year was rather less than the one which I saw exhibited by him at the same show last year. Both Mr. Pearson's and Mr. Barr's were the grandest flowers I have yet seen amongst white trumpets, and it would be interesting to know where they were raised. *C. Wolley Dod, Edge Hall, Malpas*.

"THE JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY."—The President of the Royal Horticultural Society said, with reference to the cutting of the edges of the *Journal*, that anyone who loved books would regard the cutting of the edges as barbarous. Now as a business man I would most decidedly prefer the edges of my *Journal* cut, as would, I am sure, hundreds more. *William Cuthbertson, Rothbury*.

ASH AND LARCH ON THE CHALK.—In reply to Mr. Forbes I have to say that Tisbury is on the edge of the chalk, and the place where I saw the fine Larch and Ash is several miles from that place, lies high on the chalk, and neither the Ash nor the Larch answered to Mr. Forbes' description as regards bad quality. Particulars about age and prices were given me by the owner of the estate and his agent, the former taking the trouble to introduce me to an old woodman who remembered the dates. I am usually particular about such matters. I am not at liberty to publish private estate transactions, but I give the Editor the name of this and other estates privately. *Mr.*

Forbes need not, however, confine his enquiries to one spot. The chalk formation I mean extends from Dorset to the northern extremity of Norfolk, and a journey on the London & South Western and Great Eastern Railways will show him tracts of land where the surface-soil hardly exceeds 6 inches, with pure deep chalk below, and fine trees of various species growing all over the formation. Hatfield may be named as a notable example. Fordham, in Cambridgeshire, is another; and places are numerous in Norfolk, in which county from off the chalk, was sold lately a whole Ash wood to a purchaser who came 100 miles for it and gave a good price. The finest Ash I ever saw was on the chalk near Soham, in Cambridgeshire, where I was shown a section of a disused chalk-pit, where the roots of the trees could be seen going down deep into the pure chalk, the only rooting medium, and the pit had been planted up again with the same species. The Ash here was of the largest size, and was sold, cut up into planks at 4s. per cubic foot. In Norfolk there is plenty of Larch of all ages, miles of splendid mature Scotch Fir, the Larch's companion in habits and wants; and hardwoods on the chalk and flint, where the pure chalk is just below the surface, and is reached by the roots. The two species that are said not to thrive there are the common Spruce and Wellingtonia, which dwindle when they get down to the chalk; but I did not feel sure that the local opinion is correct. Some Silver Firs growing at Lynford, beside equally big Oaks, are amongst the largest I ever saw; and these were in Argyleshire, where trees from 200 ft. (cubic) are common, and some are more than double that size—"Adam and Eve," for example, at Roseneath. *J. Simpson, Sheffield.*

SOCIETIES.

ROYAL HORTICULTURAL.

MAY 6.—The usual fortnightly meeting of the Committees was held on Tuesday last in the Drill Hall, James Street, Westminster. Although the hall was well filled with exhibits, there was not the unpleasant crowding experienced at the previous meeting, as the visitors were fewer than on that occasion.

The FLORAL COMMITTEE had a large number of groups before it, and recommended as many as seventeen medals, the principal exhibits including very unusual displays of Auriculas and Primroses from Messrs. STORRIE & STORRIE, Dundee, and of flowers of St. Brigid's Anemones, from Messrs. REANSBOTTOM, Kings County, Ireland, also cut Roses, and Roses in pots; Japanese Maples, *Primula japonica*, Ferns, and collections of hardy flowers, &c. This Committee recommended only three Awards of Merit to novelties. These were to *Faxiraga* Guildford Seedling, *Pelargonium* Colonel Baden-Powell, and the St. Brigid Anemones.

The ORCHID COMMITTEE awarded six Medals including one Gold one, also one First-class Certificate, nine Awards of Merit, and one Botanical Certificate.

The NARCISSUS COMMITTEE, naturally, was less busy than at the previous meeting, but there were several displays of the later flowering varieties. Two First-class Certificates were recommended, one to a Tulipa, and the other to Narcissus "Ada," also three Awards of Merit to varieties of Narcissus, and two Medals to Tulips and Narcissus.

The FRUIT AND VEGETABLE COMMITTEE had before it only a few Strawberries, Lemons, Cucumbers, and Radishes.

In the afternoon there was again a large accession of new Fellows to the Society, the exact number proposed for election being sixty-seven.

The Rev. Prof. HENSLOW, who has just returned from a tour in South Africa, delivered a lecture upon "The Classification of Plants by Evolution," and explained some of the grounds upon which the present system of botany is based, and pointed to the gradual development towards a perfect flower observed in the different families of plants.

Floral Committee.

Present: W. Marshall, Esq., Chairman; and Messrs. H. Turner, C. T. Druery, Geo. Nicholson, R. Dean, J. F. McLeod, J. Jennings, Jas. Hudson, W. Howe, J. A. Nix, C. R. Fielder, Chas. Dixon, R. W. Wallace, H. J. Cutbush, Chas. Jeffries, Chas. E. Pearson, Chas. E. Shea, H. J.

Jones, W. P. Thomson, E. H. Jenkins, W. J. James, Geo. Paul, R. C. Notcutt, J. Fraser, Ed. Mawley, and E. T. Cook.

Messrs. WM. CUTBUSH & SON, Highgate, London, N., had a group of plants made up of batches of "Ghent Azaleas," as Raphael de Smet, pink and white; *Narcissiflora*, yellow, and others; *Souvenir de la Malmaison* Carnations, including Lady Rose, of a very rich rose colour; tree or Moutan Peonies, including Reine Elizabeth, Louis Monchelet, George Paul (rich purple), Stuart Low (deep rose colour), &c. A few Carnations, other than the "Malmaison" type, included large, clear, yellow-flowered Cecilia, also Boadicea, very bright red colour, &c. (Silver Banksian Medal).

Auriculas and Polyanthus were very finely shown by Messrs. STORRIE & STORRIE, Dundee. All of the plants had been lifted from the open ground, and the bills mossed round previous to travelling. The Polyanthus and Auriculas also were grandly developed in foliage and bloom. Amongst varieties of Polyanthus that were most attractive, either from their good habit or brilliant colours, were Crimson Queen, Scarlet Gem, Harbiager (white, with yellow centre), White Queen, Tribute (yellow), Purple King, and Bohemian, described as a new hybrid Cowslip Polyanthus. It is of very tall habit, has large flower-trusses with pale red and yellow flowers. Of Auriculas, mention may be made of The Wasp, yellow, with deep purple blotch on each petal; Acquisition; Polaris, very large yellow flowers, much crimped, with white ring; June, yellow, with white ring; Venus, similar to the last, but flatter blossoms, and quite different foliage; Atlas, very beautiful, of primrose tint; Aurora; Melpomene; and Miss Jekyll, a very fine variety, with large brown flowers, white paste. From the same firm came a number of plants of the "Albino" Borecole, shown a year ago. These latter plants belong to the so-called laeved-leaved type; the margins of the leaves are much divided and fringed (Silver gilt Flora Medal).

Messrs. JOHN LAING & SONS, Forest Hill Nurseries, London, S.E., exhibited a few hardy Rhododendrons in pots, also *Pieris* (Andromeda) speciosa, with much larger flowers than *P. floribunda*, several Clematis, &c. Among the Rhododendrons were Rosamond, bright rose coloured, and Catawbiense, lilac-coloured.

Messrs. J. CARTER & CO., High Holborn, London, exhibited a very pretty ground group of *Cinerarias* of the stellata flowering section. The plants differed very little from each other in habit of growth and flowering, each being profusely covered with small but elegant flowers upon branching racemes. The colours were varied. A few plants of double-flowered varieties showed good cultivation (Silver Banksian Medal).

From Lady SUSAN BYNG, Bayman Manor, Chesham, Bucks, came some nice plants of *Mignonette* and *Schizanthus* in pots. They were very well cultivated (Vote of Thanks).

Primula obconica was shown in a group of plants from FRANK LLOYD, Esq., Coombe House, Croydon, who had two distinct strains, one with white flowers, and the other lilac-coloured flowers (Vote of Thanks).

Messrs. PAUL & SON, The Old Nurseries, Cheshunt, showed three blooms of a Tea Rose, Madame Berkeley; it is remarkable for extraordinary size, the petals being very deep and wide; colour white, or palely-tinted cream.

Messrs. FRANK CANT & CO., Braiswick Nurseries, Colchester, had a magnificent display of cut Roses, contained in five large boxes, there being fourteen dozen blooms of high quality. In addition to a number of standard varieties, there were well-coloured flowers of the new Tea Rose, Lady Roberts, very fine flowers of the new H.P., Mrs. Frank Cant (light pink colour), and of Muriel, very deep rose colour (Silver-gilt Flora Medal).

Messrs. B. R. CANT & SONS, Colchester, exhibited some nice standard and bush Roses in pots; also two dozen very fine cut blooms. Amongst varieties were H.T. Antoine Rivoire, Suzanne-Marie Rodocanachi, Mrs. W. J. Grant, Bridesmaid, &c. (Silver Banksian Medal).

Mr. J. WALKER, of Thame, Oxon, showed four dozen blooms of Rose Maréchal Niel (Silver Banksian Medal).

Mr. H. B. MAY, Dyson's Road Nurseries, Upper Edmonton, showed choice varieties of *Athyriums*, *Scelopendrium vulgare*, *Polypodiums*, and other British Ferns, including altogether about ninety varieties; also a group of zonal *Pelargoniums* in pots; amongst these varieties were Mark Twain, clear rose, shaded with silvery-white; Rev. F. H. Brett, scarlet; Hall Calne, scarlet; M. Alfred Erekenner, double, salmon-rose, &c. (Silver Banksian Medal).

Messrs. J. CHEAL & SONS, Lowfield Nurseries, near Crawley, exhibited a collection of sprays of flowering

and ornamental leaved trees and shrubs. Among these were the following effective species and varieties: *Cerasus sylvestris* fl.-pl., *Pyrus baccata*, *Exochorda grandiflora*, *Berberis stenophylla*, *Pyrus japonica*, *Spiraea arguta*, *Amelanchier canadensis*, *Rhododendron* Ascot Brilliant, *Akebia quinata*, &c. (Silver Flora Medal).

Mr. L. J. CHING, Crescent Nurseries, Goat Road, Forty Hill, Enfield, showed a group of plants of zonal *Pelargonium* Coronation, with very bright scarlet flowers, described as a sport from F. V. Raspail Improved.

A. F. FITTER, Esq., Miramar, Streatham Hill, showed a plant of *Cilanthus Dampieri*, with several blooms upon it. The singular flowers of this rather difficult plant to cultivate attracted attention from many of the visitors.

A spray of blooms of the bold flowered *Rhododendron* Nuttall was shown by H. E. GORDON, Esq., Ankenhead House, Cathcart, N.B. (gr., Mr. John Boucher) (Vote of Thanks).

Mr. CHAS. TURNER, Royal Nurseries, Slough, exhibited a fine display of twenty-one baskets containing plants of varieties of *Primula Sieboldi*, and several baskets containing choice Auriculas (Silver Banksian Medal).

Mr. M. PRITCHARD, of the Christchurch Nurseries, Hants, exhibited a group of hardy plants and flowers, in which were noticed *Geum minimum*, Parrot, and other Tulips, *Scilla campanulata praecox*, *Berberis dulcis nana*, *Iberis superba*, very beautiful; *Phlox canadensis*, *Trollius asiaticus*, &c.

Mr. AMOS PERRY, Hardy Plant Farm, Winchmore Hill, included amongst his hardy plants *Fritillaria recurva*, *Lithospermum canescens*, growing very vigorously; *Iris pumila hybrida* Blue Beard, and *Mecynopsis cambrica* fl.-pl. (Silver Flora Medal).

Varieties of the brilliant *Anemone fulgens* were shown by Messrs. GILBERT & SON, Dyke Nurseries, Bourne, Lincolnshire. Among these were *Greca*, *oculata* and "The Queen," a stellate flowered variety of light red colour.

Messrs. R. WALLACE & CO., Kilnfield Gardens, Colchester, had some choice hardy plants, among which we noticed *Tulipa Ostrowskyana*, *T. cornuta*, *T. galatica*, a new yellow-flowered species; *Cypripedium pubescens*, the pretty little red-flowered *Fritillaria recurva*, *Phlox setacea* Nelsoni, &c. (Bronze Flora Medal).

Mr. W. J. CAPARNE, Guernsey, showed about thirty varieties of his intermediate Irises, crosses from several species. They are recommended for flowering in April and May, between the natural blooming seasons of *I. pumila* and *I. germanica*. By these varieties it is possible to get a good display of Irises of the germanica type in May (Bronze Flora Medal).

Mr. T. S. WARE, Ltd., Hale Farm Nurseries, Feltham, exhibited among hardy plants a number of varieties of *Primula Sieboldi*; *Sarracenia purpurea* was noticed, and a fine bloom of *Iris Susiana* (Silver Banksian Medal).

Messrs. GEO. JACKMAN & SON, Woking, in their collection of hardy plants, had some very good specimens of *Cypripedium spectabile*; also *Ranunculus pyrenaica*, *Primula japonica*, *Tulipa Greigii*, *Delphinium nudicaule*, &c. (Silver-gilt Banksian Medal).

Messrs. HUGH LOW & CO., Bush Hill Park Nurseries, Enfield, showed *Schizanthus Wisetonensis*, *Metrosideros floribunda*, *Souvenir de la Malmaison*, and other Carnations, *Erica propendens*, &c.

Messrs. WOOD & SON, Ltd., Wood-Green, London, exhibited some very bright-looking wire baskets, which, if filled with fertilising moss, would make very effective receptacles for plants for use in decoration. This new design is named the "Crown," and is made in bronze-copper wire, with aluminium suspension chains and ornaments.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, Chelsea, had a group of plants of *Primula japonica* in pots. There were about sixty plants, all seedlings; they bore strong flower-spikes, 9 inches high, with the first few flowers opened; these were of rich colour, and similar to each other. The same firm exhibited *Berberis congestiflora hakeoides*, and *Trochodendron aralioides*, two valuable shrubs, referred to on p. 310.

Messrs. JAS. VEITCH & SONS also showed *Rhododendron* Col. Thornycroft, a cross from *R. campylocarpum* and a garden variety. The plant shown was hardly a foot high, but bore two trusses of flowers cream-coloured inside, with deep crimson spot at base and red outside. Messrs. VEITCH also showed a telling group, because the plants of which it was formed were placed in compact masses, and arranged

below the level of the eye. Very striking was a mass of *Erysimum*, Dwarf Compact, *Anbrietta Souvenir de W. Ingram*, flower of the size of a shilling, and of a bright purple tint; *Arabis alpina* fl. pl., an excellent white-flowered plant, 6 to 8 inches high, with double pure white flowers set on short spikes; *Phlox amena*, purplish-lilac; *Gentiana verna*, the brightest of blue flowers; *Enphorbia pilosa* major, some beautiful Cowslips, large-flowered, and varied in colour; *Myosotis* in variety, including the pink-flowered *M. alpestris rosea*; *Iberis*, Wallflowers, and *Cheiranthus* *Heir* var. *Harpor Crewe*, beautifully bloomed. This firm showed a semi-circular group, 12 feet in the long diameter, of double-flowered Wallflowers, consisting of yellow, brown, and purple varieties, with large spikes topping stout stems, 1½ to 2 feet in height. The group was backed with bushes of double-flowered *Prunus*, *Pyrus*, &c., loaded with flowers (Silver Flora Medal).

Mr. J. RUSSELL, Richmond Nurseries, Richmond, Surrey, exhibited in a group arranged on the floor a number of bushes and standards of Japanese Maples, green, purple, and bronze leaves of much variety of leaf form in all the various sections (Silver Flora Medal).

Messrs. BARR & SONS, King Street, Covent Garden, exhibited Tulips extensively; these consisting chiefly of breeders or selfs in variety. Others having fixed colours were Yellow Queeo, Picotee, Lion d'Orange, Fransoniana, Coquette de Belleville, Striped Beauty, York and Lancaster, Buenventura, Goldflake and others. A few alpine plants were included in the exhibit, namely, *Saxifragas*, *Phloxes* of low growth, *Gentiana verna*, *Iris albicans grandiflora*, *I. a. alba*, *Allysum*, *Arabis*, *Iris lutescens*, *Fritillaria pynaena*, *Cytisus Ardoinei*, *Auricula* Mrs. Meicklejohn, of a rich crimson with golden-yellow paste; *Aubrietia Bridesmaid*, of a light tint of lilac; and *Trillium grandiflorum*.

JOHN WATERER & SON, Ltd., American Nurseries, Bagshot, Surrey, showed a prettily arranged group of Japanese Maples, as bushes and low standards, set off with Ghent Azaleas, hardy *Rhododendrons*; the plants being thrifty and well-grown (Silver Flora Medal).

Awards.

Pelargonium Colonel Baden-Powell.—An ivy-leaved variety with very large double pink flowers having a little bright red colour on the upper petals. From Mr. C. TURNER, Royal Nurseries, Slough (Award of Merit).

Saxifraga Guildford Seedling.—This is described as a seedling from *S. Rhei* which it greatly resembles, except in the colour of the flowers, being quite crimson instead of pink. It has dwarf "mossy" foliage and the plants are from 3 to 7 inches high, with generally about four flowers upon each stem. Shown by the Guildford Hardy Plant Co., Millmead, Guildford (Award of Merit).

St. Brigid Anemones.—Messrs. REAMSBOTTOM & Co., Alderborough Nursery, Geashill, Kings County, Ireland, exhibited a very large number of flowers of this well known strain of Anemone. The blossoms were bold and of large size, mostly semi-double, but including single-flowered varieties, and represented a great variety of colours. An Award of Merit was recommended to the strain, and a Silver-gilt Flora Medal to the magnificent display made by the collection of flowers, which were shown in bunches.

Narcissus Committee.

Present: Mr. H. B. May (Chairman), with Miss E. Willmott, and Messrs. S. Eugene Bourne, A. Kingsmill, J. T. Bennett-Poe, W. F. M. Copeland, J. D. Pearson, P. R. Barr, W. W. de Graaff, W. T. Ware, W. Poupert, Jas. Walker, C. Scrase Dickens, G. H. Engleheart, and Richard Dean.

In a group of flowers from Messrs. BARR & SONS, King Street, Covent Garden, London, we remarked a rather striking flower in Red Star, an *Incomparabilis* variety, with widely winged segments and brilliant cylindrical red-orange cup, and an unusually long scape to the flower. The *N. poeticus* kinds were seen in the well-formed Tripodalis, a medium-sized flower; in *N. p. Almira*, a handsome and pure kind; and in *N. p. Glory*, a flower quite firm in substance, and very large. Pure, good flowers were seen, too, of *N. Snowflake*, a white Ajax kind; *Catherine Spurrell*, and *N. Alida*, a trumpet kind, of a full golden tint. *Prince Calibri* is a stout form of *N. Grandee*, and *N. intermedius Sunset* is very beautiful and free. *N. Leedsli Gem* is a beautiful flower, prim and pleasing, and late withal (Silver Flora Medal).

In a group from Messrs. VEITCH & SONS, Chelsea, we noted some three or four kinds that only the word prodigious will describe. These were all a trifle coarse in texture, having been grown in Holland, and would

probably be different in British soil. These are Mrs. H. J. Veitch, a monster Golden Ajax, with broad ovate segments to the perianth; *N. Laura*, with pointed segments, and a deeply-cut crown, with a strong up-raised inclination; and *N. Euterpe*, another golden self. Other good kinds were the widely winged Red Star, already noted; *N. poeticus*, glossy, very white; *N. p. grandiflorus*, *N. p. Almira*, Captain Nelson, a good late yellow; *Madame Plomp*, a pleasing flower called Perfecta, in the way of Princess May; Amsterdam, a pale incomparabilis, with pale cinnamon crown; and Theodore, with its curiously spreading crown, freely fringed internally. These, with *N. bicolor Grandee*, and *N. Lydia*, a Nelson kind, and "rather pleasing, were the more striking of this group. Messrs. Veitch & Sons also showed a collection of early and May-flowering Tulips.

Mr. H. J. JONES, Ryecroft Nurseries, Lewisham, exhibited cut flowers of varieties of Tulips, including a few early flowering and May flowering sorts; also varieties of Tulipa, as *T. elegans*, *T. e. variegata*, *T. e. alba*, &c. Of most interest to some visitors was *La Tulipe Noire*, a Darwin variety 2 feet high, with flowers of intense brown-purple colour, almost black (Silver Banksian Medal).

Seedling *Narcissus* came also from G. H. CAMMELL Esq., Brookfield Manor, Sheffield, and some of these the Committee desired to see again.

Awards.

Tulipa Gesneriana lutea pallida.—Miss F. CURREY, of Lismore, Ireland, showed *Tulipa Gesneriana lutea pallida*, a yellow-coloured flower of good shape and large size, and having the scent of Violets. The stems were almost 2 feet high, and very stout (First-class Certificate).

Narcissus Ada.—A pure waxy white variety, generally with three flowers in a scape, obviously through the influence of *N. triandrus*, which is one of its parents. It is an exquisite flower, and the rounded character of the upper portion of the trumpet characterises it greatly (First-class Certificate).

N. Moon Ray.—This is a whiter kind, generally with a two-flowered scape, and still of a parentage akin to the first; generally it is the larger flower, but with rather less substance and character (Award of Merit).

N. Cecil Rhodes.—A giant pale-flowered Queen of Spain, the possible result of crossing *N. triandrus* and *N. Emperor* (Award of Merit).

N. Watch-Fire.—A striking and distinct flower; the segments of the perianth of a creamy-buff tone, and the crown of deep cinnamon, margined lightly with deep orange (Award of Merit).

All of these were shown by Miss E. WILLMOTT, Watley Place, Essex.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), J. Colman, de B. rawshay, H. M. Pollett, F. A. Reider, W. Cobb, H. Little, J. Douglas, W. A. Bilney, H. T. Pitt, T. W. Bond, J. W. Odell, F. J. Thorne, G. F. Moore, W. Boxall, W. H. White, W. H. Young, H. A. Tracy, J. W. Potter, F. Sander, and H. Ballantine.

There was a fine show of Orchids, especially *Odontoglossums*.

The exhibit of the day was a very remarkable group of excellently well-grown and finely-flowered Orchids from the gardens of H. T. PITT, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood), who was accorded the rare distinction of a Gold Medal. The group was composed principally of *Odontoglossums*, a large proportion of them being hybrids and finely blotched *O. crispums*, of which such a display has seldom been seen in one group. The finest of the blotched *O. crispums* was *O. e. Pittiae*, which secured a First-class Certificate (see awards), and other good ones were *O. crispum Bonnyanum*, *O. e. Chathamense*, the now well-known *O. e. Annie*, which received a First-class Certificate at the last Temple Show; *O. e. Fascination*, and other remarkable forms, both white and spotted. Other fine *Odontoglossums* in the group were, *O. Hallii*, *O. H. leucoglossum*, the new and richly-coloured Queen Alexandra, *O. x Wilkeanum*, Rosslyn variety; good *O. triumphans*, and *O. luteo-purpureum*, *O. x Andersonianum* varieties, *O. x Ruckerianum* "Nettie," which is very pretty; many large and richly spotted *O. x Adriane*, and other varieties and species. Among the *Cattleyas* the delicately tinted *C. Schroderae* *Heatonensis*, and the fine *C. Mendeli* "Alfred Snee," were prominent; *C. Lawrenceana*, and *C. x Lawre-Mossiae*, excellently flowered; *C. Schilleriana* Pitt's variety, a very fine flower, with glowing purple lip; and other *Cattleyas* and *Laelias* of

unusual merit. Other showy plants in the group which Mr. Thurgood so excellently arranged were a good set of *Miltonia vexillaria*, of which *M. v. Kaiserin Augusta* was the finest in colour; three good *M. Roezlii*, *Brassia longissima*, *Cypripedium Mastersianum*, and other *Cypripediums*, including the favourite *C. Lawrenceanum* *Hyeaunum*; *Phalenopsis amabilis*, *Vanda teres*, *Dendrobium rhodopterygium*, *Oncidium ampliatum*, and *Chondrorhyncha Chestertonii*.

Baron Sir H. SCHRODER, The Dell, Egham gr., Mr. Ballantine, showed an interesting selection of remarkable *Odontoglossums*, among which were the original *O. x excellens*, certificated at the Orchid Conference in 1885, and now a very large and stout plant in perfect health, bearing a strong spike of eleven large lemon-yellow and white flowers, handsomely blotched with red-brown. Other superb varieties were *O. triumphans latispalum* and *O. t. Dellense*, two splendid flowers; *O. x Harryano-crispum* "Duchess of York," *O. x Andersonianum* *Dellense*, and *O. x Wilkeanum* *giganteum* (Silver Banksian Medal).

Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), was awarded a Silver Flora Medal for an effective group, in the centre of which was a fine specimen of *Cymbidium x eburneo Lowianum*, with six spikes; and beside it the remarkable *C. x l'Ansoni*, a distinct natural hybrid of *C. giganteum* and *C. eburneum*, and in front a grand specimen of *Cymbidium Devonianum* with six fine racemes of flowers. In the group, also, the forms of *Miltonia vexillaria* were well represented by fine examples of *M. v. chelsiense*, *M. v. Empress Victoria Augusta*, the nearly white *M. v. albens*, &c.; *M. x Bleuana*, *Aërides Fieldi*, with two fine spikes; *A. crispum* Warneri, well flowered; a good selection of *Odontoglossums*, *Masdevallia caudata xanthocorys*, *M. Peristeria*, *M. Roezlii*, and other *Masdevallias*; *Laelio-Cattleya x Hebe*, *L. C. x Eclipse*, and other hybrids.

Messrs. JAS. VEITCH & SONS, Ltd., Chelsea, were awarded a Silver Flora Medal for a very bright group, in which the rich colours of the hybrid *Laelio-Cattleyas* gave a fine effect. There were, among others observed, *L. C. x Cybele*, several good *L. C. x Hyeana*, *L. C. x Aphrodite alba*, *L. C. x Wellsiana*, *L. C. x Ascania*, *L. C. x Zephyra*, *L. C. x G. S. Ball*, and others; also *Laelia x Digbyano-purpurata*, *L. x Latona*, hybrid *Disas*, *Masdevallia x Ajax superba*, *M. Parlatozana*, *Cypripedium x Vipan*, *C. x Gowerianum magnificum*, a good selection of forms of *Phaius x Norman*, *Cattleya Schroderae*, *C. Mendeli*, and *C. Mossiae*.

Sir TREVOR LAWRENCE, Bart., Burford Lodge (gr., Mr. W. H. White), staged an interesting selection of rare Orchids, among which the very remarkable *Maxillaria fractiflexa*, with its singular flower with long and singularly-arranged segments, was the most remarkable (see Awards); with it were a fine spike of the pretty spotted *Odontoglossum x A. de Lairese*, an ally of *O. x Adriane*; the delicately-tinted bluish-white *Dendrobium x Ethel*, and the dark-coloured *Laelia x Pacavia* (*purpurata x tenebrosa*).

Messrs. HUGH LOW & CO., Bush Hill Park, were awarded a Silver Banksian Medal for a pretty group, in which the forms of *Cattleya Schroderae* were well represented; also *Cymbidium Lowianum* corcolor, *Odontoglossums*, and other showy Orchids, of which a finely flowered specimen of *Cattleya Skinneri* formed an effective centre.

Messrs. B. S. WILLIAMS & SON, Holloway, received a Silver Banksian Medal for a group, in which were good *Laelia purpurata*, *Vanda tricolor* "The Glen variety," *Dendrobium Dalhousianum luteum*, *D. thyrsoiflorum*, *Cattleya Mendeli*, *C. Mossiae*, *Calanthe x bella*, *Cypripedium x Lehaudianum*, *Tricopilia crispa*, *Odontoglossum crispum*, *O. naevium majus*, *O. Uro-Skinneri*, *O. pulchellum*, *O. Pescatorei*, &c.

The Hon. WALTER ROTHSCHILD, Tring Park, showed *Laelia x cinnabrosa*, "Tring Park variety," a very handsome form, with orange-red sepals and petals and rose lip, with claret coloured veining.

J. E. VANNER, Esq., Chislehurst (gr., Mr. W. H. Robbins), showed *Laelio-Cattleya x General Baden-Powell* (*L. tenebrosa x C. Lawrenceana*).

JEREMIAH COLMAN, Esq., Gatton Park (gr., Mr. W. P. Bound), showed *Cattleya x Louryana*, a supposed hybrid between *C. intermedia alba* and, it is thought *C. bicolor*. It is near in form to *C. intermedia alba*, and has white flowers, with an uncommon tint of violet-purple on the front of the lip.

H. L. BISCHOFFSHEIM, Esq., The Warren House, Stanmore (r., Mr. M. Gleeson), showed *Cattleya Mossiae* "The Warren House variety," a very large flower, with light rose sepals and petals, and an effective marbling of crimson-purple on the lip.

NORMAN C. COOKSON, Esq., Oakwood, Wylam (gr., Mr. H. J. Chapman), showed a spike of a very fine form of *Cattleya* × *Jupiter* (Warszewiczii × Lawrenceana). The flowers were quite intermediate between those of the two parents; sepals and petals light rose; lip dark ruby-crimson, with white throat and two light patches on each side of the central portion of the lip, as in *C. Warszewiczii*.

Mr. OTTO BEYRODT, Manenfelde, Berlin, sent flowers of two fine spotted *Odontoglossums*, the larger, a natural hybrid, of great merit.

Awards.

FIRST-CLASS CERTIFICATE.

Odontoglossum crispum *Pittii*, from H. T. PITT, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood).—A fine addition to the front-rank varieties of blotched *Odontoglossum crispum*. Flower of perfect shape, and all the segments broad. Sepals and petals white, with a tinge of purple showing through from the reverse side. Both sepals and petals heavily and symmetrically blotched with dark chocolate-purple, the blotches being arranged with the larger ones in the outer half of each segment and the smaller ones outside.

AWARD OF MERIT.

Odontoglossum Halli "Queen Alexandra," from H. T. PITT, Esq. (gr., Mr. Thurgood), a very darkly coloured form of *O. H. xanthoglossum* type. Sepals chocolate-brown, tipped with yellow. Petals and lip pale yellow, heavily blotched with red-brown. A very fitting companion to Mr. Pitt's phenomenal *O. H. Edward VII.*, which is by far the best of the *O. H. leucoglossum* class.

Odontoglossum crispum "Fairy Footsteps," from H. T. PITT, Esq. (gr., Mr. Thurgood), a large and finely-formed white flower tinged with pink, and bearing some purple spots on the petals.

Odontoglossum hystrix secundum nulli, from H. T. PITT, Esq.—A grand form of *O. Inteo-purpureum*, with erect spike of pale yellow flowers, heavily marked with brown, and white lip with yellow crest and some reddish blotches.

Odontoglossum triumphans latiseptum, from Baron Sir H. SCHRODER (gr., Mr. H. Ballantine).—A fine flower of wax-like substance, and with the sepals as broad as the petals. The large blotching in this variety is of a peculiar nut-brown hue; lip white with large light-brown blotches.

Odontoglossum Harryana-crispum "Duchess of York," from Baron Sir H. SCHRODER (gr., Mr. H. Ballantine).—Flowers cream-white, evenly marked with light purple, and tinged rose.

Dendrobium × *Ethel* (*japonicum* × *Rolfae*), from Sir TREVOR LAWRENCE, Bart. (gr., Mr. W. H. White).—An elegant little hybrid with neatly-formed white flowers tipped with pink.

Cattleya Mossie Arnoldiana "Westfield variety," from FRANCIS WELLESLEY, Esq., Westfield, near Woking (gr., Mr. Gilbert).—One of the finest of white *Cattleyas* of the *C. M. Reineckiana* class, the flower closely resembling a large and finely-formed *C. M. Reineckiana*, with a very slight blush of pink on the tips of the petals. The plant bore three very fine flowers, white with an almost imperceptible flush of pink on the tips of the petals; the front of the lip being marbled with bright purple, disc tinged with yellow.

Disa × *Luna* (*racemosa* ♀, *Veitchii* ♂), from Messrs. JAS. VEITCH & SONS, Chelsea.—Flowers larger than those of *D. racemosa*, and of a bright rose-purple tint, the interior of the galea being whitish, with a tinge of rose and a network of purple.

Odontoglossum citrosium punctatum, from Sir FREDERICK WIGAN, Bart. (gr., Mr. W. H. Young).—A pretty form, with flowers spotted with purple, and rose-purple lip.

BOTANICAL CERTIFICATE.

Maxillaria fractifera, from Sir TREVOR LAWRENCE, Bart. (gr., Mr. W. H. White).—A very extraordinary and singular-looking species, with narrow segments. The erected dorsal sepal, 3 inches high, is yellowish; lower sepals of similar length, curiously lipped, the blades being turned over and continued downward, yellow, tinged brown. Petals extended and twisted, white, with wart-like formations on the surface. Lip short, white with purple spots. A very quaint-looking flower.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq., Chairman; and Messrs. H. Balderson, Jos. Cheal, M. G. Gleeson, S. Mortimer, A. Dean, Ed. Beckett, W. Pope, George Kelf, G. Reynolds, C. G. A. Nix, Geo. Norman, H. Somers-Rivers, Jas. H. Veitch, H. Esliogs, F. Q. Lane, W. Bates, O. Thomas, J. Jaques.

A collection of ripe Strawberry fruits from the SWANLEY HORTICULTURAL COLLEGE was awarded a Silver Banksian Medal.

Some very fine Lemons from the gardens of Lady PLOWDEN were culturally commended.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

APRIL 17.—M. WELLS, Esq., Sale (gr., Mr. Lamb), exhibited a group of Orchids, and received Awards of Merit for the following plants: *Odontoglossum crispum* "Mrs. Wells," *O. triumphans latiseptum*, *O. triumphans* var., *Cypripedium* × *Colossus*. Silver-gilt Medal for group.

S. GRATRIX, Esq., Whalley Range (gr., Mr. Cypher), received an Award of Merit for *Cypripedium* × *Dowlingianum*, the parents of which are *C. insigne* var. *Chantini* × *C. Godefroyae* var. *leucochilum*.

R. ASHWORTH, Esq., Newchurch (gr., Mr. Pidsley), received Awards of Merit for *Odontoglossum crispum* var. "Dora," *O. c.* var. "Pearl," *Cattleya Schroderae* var. Mrs. Harry Ratcliffe, *Dendrobium Cybele* var. *Evansianum*, and *Cattleya Mossie* var. "Emperor." A Silver Medal was awarded for the group.

A. WARBURTON, Esq., Haslingden, received a First-class Certificate for a grand form of *Odontoglossum* × *Adrianæ* called "Mrs. B. Walker."

Mr. J. CYPHER staged a fine group of plants containing some fine forms of *Cattleya Lawrenceana*, *Lælia* × *Latona*, *Cypripedium villosum* var. *gigantea*, and cut flowers of *Vanda teres alba*; *Dendrobium* × *Nestor* was also shown.

R. BRIGGS-BURY, Esq., Accrington (gr., Mr. Wilkinson), received an Award of Merit for *Odontoglossum* × *Adrianæ* var. *Tsaritzza*.

T. BAXTER, Esq., Morecambe, staged a group of *Odontoglossums* for which a Bronze Medal was awarded.

Mr. W. HOLMES, Timperley, exhibited a plant of *Lycaste Skioneri* var. *Hardyana*, and *Odontoglossum crispum* var. *bella*, both of which received Awards of Merit.

ANNUAL MEETING.

MAY 1.—There was a grand muster of the Committee on this occasion, the first meeting of the session 1902—1903. The report stated that 319 awards of various descriptions had been made during the past year, the winners of points being O. O. Wrigley, Esq., 1st; S. Gratrix, Esq., 2nd; Mr. A. J. Keeling, 3rd; to whom were awarded respectively Gold, Silver-gilt, and Silver Medals. The finances of the Society are in a flourishing condition, there being a substantial balance at the bank. S. Gratrix, Esq., was voted Chairman for the session, Mr. J. Cypher Vice Chairman. The opening meeting of the year was most encouraging, the Hall, although small, being crowded with plants, there being eleven groups in addition to numerous smaller displays.

J. LEEMANN, Esq., Heaton Mersey (gr., Mr. Edge), staged a number of very good plants, amongst which were some beautiful spotted forms of *Odontoglossum crispum*. A charming little hybrid in this group was *Brassola Cattleya* × *nivalis*, the parents of which are *Brassola fragrans* and *Cattleya intermedia*; the flower is snow-white, and partakes more of the character of the *Brassola* (Award of Merit). A good form of *Odontoglossum* × *Adrianæ*, called *Sappho*, also received an Award of Merit, the same Award going to *Odontoglossum crispum* var. *Mars*, *O. c.* var. *Rosette*, *O. c.* var. *Emilia*, and *O. c.* var. *Volodyoski*; an Award of Merit was also voted to *Cattleya* × *Grand Duchess*, a hybrid between *C. Lawrenceana* × *C. Mossie*. A Silver-gilt Medal was awarded for the group.

S. GRATRIX, Esq., Whalley Range (gr., Mr. Cypher), received a First-class Certificate for *Cypripedium* × *Emperor of India* (noted elsewhere), and an Award of Merit for a handsome form of *Odontoglossum crispum* var. *guttatum*.

M. WELLS, Esq., Sale (gr., Mr. Lamb), staged a fine group of Orchids, there being many choice plants in it. *Lælia-Cattleya Haroldiana*, a hybrid between *L. tenebrosa* and *Cattleya aurea*, was possibly the best, being a fine well-balanced flower, rich brown in the segments, with dark maroon shading in the lip (First-class Certificate). A very striking form of *Cattleya Lawrenceana* received a similar award. Other good plants in this group were *Cattleya Schroderae* var. *alba*, *Cypripedium Shilliamum*, *Miltonia* × *Bleuana* var. *grandiflora*, *Odontoglossum Inteo-purpureum* var. *Edward VII.* A Silver-gilt Medal was given for the group.

Messrs. STANLEY, ASHTON & CO. staged several good forms of *Cattleya Mendeli*, and a beautiful form of *Cattleya* × *Miss Harris*, the latter receiving a First-class Certificate. A Bronze Medal was given for the group.

Messrs. HUGH LOW & CO. staged a few good things, amongst which were noted *Cattleya intermedia* var. *alba*, and *Odontoglossum Andersonianum* var. *maxima*.

R. TUNSTALL, Esq., Burnley (gr., Mr. Balmforth), was

awarded a Silver-gilt Medal for a number of good plants, *Cypripedium* × *Edithæ* being given an Award of Merit. *Cypripedium Lawrenceanum* var. *Ilyeana* and *C. callosum* var. *Sanderæ* were included in this group.

R. ASHWORTH, Esq., Newchurch (gr., Mr. Pidsley), staged a very good group of Orchids, inclusive of good forms of *Odontoglossum crispum*, *O. c.* var. *Polycletus* and *O. c.* var. *Dorothy* received Awards of Merit. Several fine forms of *Cattleya Mendeli* were also shown; *Odontoglossum Pescatorei* var. *Kitty* received an Award of Merit. A Silver-gilt Medal was awarded for the group.

E. ROGERSON, Esq., Didsbury (gr., Mr. Towe), exhibited a well flowered plant of *Oncidium Marshallianum* bearing 211 blooms, and received a Cultural Certificate. *Cypripedium Sanderianum*, with two flowers, came from the same collection, and received a First-class Certificate. A Bronze Medal was awarded for the group.

E. O. SCHNEIDER, Esq., Whalley Range (gr., Mr. Hunt), exhibited *Dendrobium thyrsiflorum* with fifteen flower spikes. Mr. J. CYPHER staged a good group of plants principally *Cattleyas*, *Dendrobiums*, and *Cypripediums*, *Lælia-Cattleya* × *Major-Gen. Baden-Powell* received an Award of Merit; a fine form of *Dendrobium* × *Cybele* var. *gigantea* was also shown. A Silver-gilt Medal was awarded for the group.

Mr. J. ROBSON, Altrincham, received a Bronze Medal for a group of plants, two nice plants of *Cymbidium Lowianum* var. *concolor* being prominent.

Mr. A. J. KEELING exhibited a pretty form of *Odontoglossum* × *elegans*.

T. BAXTER, Esq., Morecambe (gr., Mr. Roberts), staged a few plants of *Odontoglossums*. P. W.

BRISTOL & DISTRICT GARDENERS' MUTUAL IMPROVEMENT.

APRIL 21.—The fourth annual meeting of this Association was held at St. John's Parish Rooms, Redland, on the above date, Mr. E. BINFIELD occupying the Chair.

Lieut.-Col. H. CARY BATTEN was re-elected as President. Mr. E. Binfield was elected as Chairman; and Messrs. E. Poole, F.R.H.S., and Garnish as Vice-Chairmen for the ensuing year. Mr. W. Ellis Groves was re-elected as Hon. Secretary and Treasurer. Fifteen members were elected to serve on the committee, and five members were asked to act as a sub-committee to consider the advisability of forming a library for the use of the members.

NATIONAL AURICULA. (Midland Section.)

APRIL 30.—The third exhibition of the Midland Auricula Society took place in the Botanical Gardens, Edgbaston, Birmingham, and was the means of bringing together a display very much superior to that of last year, both in numbers and quality. The occasion furnished a happy battle ground between north and south, for growers in the northern district were represented by the Rev. F. D. HORNER, with Messrs. B. SIMONITE, Sheffield; J. W. BENTLEY, Manchester; and T. LORD, Tadmorden. Southern growers were represented by Mr. J. DOUGLAS, Bookham; and Messrs. PHILLIPS & TAYLOR, Bracknell, Berks; and a considerable number of growers in the Birmingham district competed. The Birmingham Botanical Society offered two of their Medals to be awarded according to a tally of points; the Silver Medal became the property of Mr. JAMES DOUGLAS, and the Bronze Medal of the Rev. F. D. HORNER. The quality of the Auriculas, both show and alpine, was very good; better on the whole than was seen in London. The arrangements made by Mr. W. B. LATHAM were as usual admirable.

SHOW AURICULAS.

The leading class was for six varieties, and there were eight exhibitors, Mr. JAMES DOUGLAS taking the 1st prize with excellent plants of green edges: *Chloe* and Mrs. Henwood; grey edges: *George Lightbody* and *Olympus*; white edge: Mrs. Dodwell; and self: *Ruby*. Mr. T. LORD, Tadmorden, was 2nd; and Mr. J. STOKES, Harborne, was a good 3rd.

There were eleven competitors with four plants, Mr. T. LORD taking the 1st prize with green edges: *Abraham Barker* and Mrs. Henwood; grey edge: *George Lightbody*; and white edge: *Aeme*, all finely developed. 2nd, the Rev. F. D. HORNER.

There were nine exhibitors of two plants, the Rev. F. D. HORNER taking the 1st prize with another of his fine new green edges *Undaunted*, and *Eurydice*, a dark self; 2nd, Mr. W. H. MIDGLEY.

Single specimens.—Green edges: 1st, Mr. T. LORD, with *Abraham Barker*; and 2nd with *Shirley Hibberd*. Grey edges: 1st, Mr. W. B. LATHAM, and 2nd, Mr. J. DOUGLAS, both with *George Lightbody*. White edges: 1st, the Rev. F. D. HORNER, with *Modesty*; 2nd, Mr. J. DOUGLAS, with *Morna*, both promising new varieties. Self: 1st, the Rev. F. D. HORNER, with *Challenger*, a rich ruby-red self, and 3rd with *Artemis*, a violet self; Mr. T. LORD was 2nd with *Gerald*.

The premier stage Auricula was the Rev. F. D. HORNER's fine self *Favourite*.

ALPINE AURICULAS.

These were numerous, bright, and effective. There were eight competitors with six plants. Mr. J. W. BENTLEY was placed 1st with *Aglaia*, Mrs. Lord, *Attraction*, Mary Bentley, *Coronet*, and *Olivia*, mainly of his own raising, and all having refined blooms. Mr. J. DOUGLAS was 2nd, and Mr. A. R. BROWN was 3rd.

There were ten collections of four plants, and Mr. DOUGLAS came 1st with *Firefly*, *Dean Hole*, *Duke of York*, and *Ziska*, all very bright and striking. Mr. J. W. BENTLEY was 2nd, and Mr. A. R. BROWN was 3rd.

With two plants Mr. J. CLEMENTS was 1st, he had *Winifred*, with a charming white centre; and Mrs. M. R. SMITH. Mr. J. GODWIN came 2nd with Mrs. Harry Turner and *Dean Hole*.

Single Plants.—Gold centres: 1st, Mr. R. HOLDING, with Mrs. Gorton; 2nd, Mr. A. R. BROWN. White centres: 1st, Mr. BENTLEY, with *Modesty*; 2nd, Mr. BURKIDGE, with Mrs. H. Turner.

The premier alpine Auricula was Mr. BENTLEY'S *Aglaia*.

SEEDLING STAGE AURICULAS.

Two prizes were offered, and they both fell to the lot of the Rev. F. D. HORNER, with *Nigella* and *Erebus*, two fine selfs of his own raising. Alpines, gold centres: 1st, Mr. CARTWRIGHT, with John Henry Lloyd, a bright and promising flower; 2nd, Mr. R. HOLDING, with an unnamed seedling. Light centres: 1st, Mr. BENTLEY, with *Blue Peter*, and 2nd with *Chlo*.

Certificates of Merit were awarded to the following novelties—Green edge: *Chloe*, Mr. J. DOUGLAS; white edge: *Letitia*, Mr. W. H. MIDDLEY. Selfs: *Favourite Nigella*, and *Erebus*, the Rev. F. D. HORNER. Alpines: *Aglaia*, *Attraction*, and Mrs. Lord, from Mr. J. W. BENTLEY.

Gold-laced *Polyanthus* showed a great improvement upon those seen in London. The best four plants came from Messrs. POPE & SON, who had two of *Cheshire Favourite*, and one each of *George IV.* and *Exile*. Mr. J. STOKES, *Harborne*, was 2nd, with Miss Turner, *Cheshire Favourite*, *Middleton Favourite*, *George IV.* The best single plant was *George IV.*, from Messrs. POPE & SON; Mr. J. STOKES was 2nd, with the same variety.

Baskets of *Primulas* made a very pleasing feature, especially that from Messrs. POPE & SON to which the 1st prize was awarded.

BRADFORD PAXTON.

MAY 3.—At the fortnightly meeting held on the above date, the President, Mr. A. E. Benny, was presented with a Certificate of the Royal Horticultural Society framed in carved old Oak, in appreciation of the good work he has done.

A chief work of the Society at the present time is to provide allotment gardens in various parts of Bradford. The society numbers over one hundred members, the meetings are well attended, and a very good feeling prevails among them. On the occasion noted above, Mr. J. Snell, gr. at Farnley, Otley, read a short paper on the "Cultivation of the Strawberry."

ROYAL CALEDONIAN HORTICULTURAL.

MAY 7, 8.—The weather in Scotland has been so wintry that the prospects of a good show may be said to have been fully discounted. The weather indeed made vegetables an almost impossible item, Cucumbers and Mushrooms, however, being good. In the plant classes the chief exhibits were the groups of plants arranged on the floor. Here, Mr. MCINTYRE, gr., The Glen, was 1st with an admirable arrangement; Mr. WOOD, gr., Oswald House, 2nd. Mr. MCINTYRE was 1st also for a table of Orchids, and for *Azaleas*, winning in four classes. Mr. WOOD also contributing well-bloomed specimens.

For four Orchids, Mr. Sharp, gr. to C. Q. WOOD, Esq., Freeland, Forcadenny, staged for 1st prize an excellent *Odontoglossum vexillarium*, *O. Alexandra* with five spikes, *Vanda tricolor*, and *Cymbidium Lowianum*. Mr. MCINTYRE was 2nd.

The stove and greenhouse flowering plants were not represented largely, and the plants generally were small. Of some lovely alpine plants that were staged, the six from Mr. A. PATERSON, Polton House, Lasswade, were real gems, in perfect condition, viz., *Gentiana verna*, *Dianthus alpinus*, *Ranunculus pyrenaica*, *Genista pilosa*, *Primula formosa*, and *Aretotis nivea*.

Auriculas were staged in moderate numbers, the six from Mr. ALLAN, Stobhill, Gorebridge, to which the 1st prize was awarded, being quite the best. Quantities of *Primroses*, garden *Polyanthus*, and *Primula obconica* were also staged.

Herbaceous Calceolarias formed an effective display, Mr. D. MACKAY, Lasswade, securing the 1st place in a keen competition.

Of Ferns, mention must be made of the three exotic Ferns, grand plants, and the three *Adiantums* from Mr. Stewart, gr. to P. NEIL FRASER, Esq., Rockville, as being specially fresh and good.

A few noteworthy *Amaryllis* were staged, Mr. McDONALD, Cardronna, Innerleithen, being 1st here, with excellently cultivated plants, carrying large and fine flowers.

Of bulbous plants *Tulips* were undoubtedly the finest show. Mr. BRYDON, Innerleithen, secured the 1st prize for six potfuls, with extra fine examples.

In the cut flower classes, a pretty table was furnished with *Daffodils*. The class for twenty five varieties, Messrs. Barr & Co., London, providing the prize, and the flowers arranged for effect, brought out two competitors. That from Mr. J. H. Cumming, gr. to Lady STEWART, Grantully Castle, being in all respects the best. For twelve bunches, Mr. BRYDON was awarded 1st prize with fresh clean blooms. Some fine lots were passed apparently because too many trumpet varieties were employed.

Of *Roses* there was a most charming display; twenty-four varieties all Teas from Mr. W. Young, gr. to Mrs. FLEMING-HAMILTON, Craigland, being exceptionally fine. Mr. KIDD, Carberry Tower, and Mr. MANSON, Wallhouse, also showed conspicuously fine blooms.

NURSERYMEN'S EXHIBITS.

Nurserymen contributed very largely to the success of the exhibition. No group was more effective than that of Mr. J. DOWNIE, Beachwood, a bold circular mass of forced shrubs, the dwarf plants as a groundwork, with standards dotted not too closely over the whole.

Messrs. R. B. LAIRD & SON, had a very extensive group, arranged with great taste, massing the various subjects to a very large extent, one group of *Ghent Azalias* in particular being very effective.

Messrs. METHVEN & SONS, Warriston, had a most brilliant table of early Dutch *Tulips*; and Messrs. HOGG & ROBERTSON, Dublin, an attractive display of *Tulips*, mostly *Darwins*.

Messrs. CUNNINGHAME & FRASER, Comely Bank, provided a natural rockwork, with divisions of cork, furnished with the best alpine of the season. Two spikes of *Eremurus robustus* attracted not a little attention.

Mr. FORBES, Buccleuch, Hawick, provided a neat table, mostly of spray flowers, with *Paeonies* in beautiful variety.

Not the least interesting exhibit was that of Messrs. STORRIE & STORRIE, Dundee, whose variegated Scotch *Kale*, yellow and other *Auriculas*, attracted much attention.

The central position of the show was worthily filled by a grand mass of flowering and foliage plants from Mr. COWAN, Penicuik House, and brought the newer *Daffodils* to the notice of the Edinburgh public.

The point of honour in the centre of the Waverley Market was occupied by a large and attractive group of plants from Messrs. DICKSON & CO., Waterloo Place; nor must one forget a special exhibit of *McEwan's Cabbage*, from Messrs. T. METHVEN & SONS.

FLORAL COMMITTEE.

First-class Certificates were awarded to *Rhododendron James Whitton*, from Mr. MACMILLAN, Trinity; *Primula decora alba*, a pure white sport; and *P. d. Adonis*, a blush seedling, both from Mr. LINDSAY, Kames Lodge, Murrayfield; Messrs. DICKSON & CO., Waterloo, also received a First-class Certificate for *Rhododendron James Welsh*, and for zonal *Pelargonium Coronation*.

PLAN COMPETITION.

Sir JOHN GILMOUR, last autumn, offered a series of prizes to young gardeners, for the best design of a piece of ground attached to a house, the designs to be returned on April 1, to Mr. MURRAY THOMSON, S.S.C., the Secretary of the Royal Caledonian Society. No less than 23 plans were forwarded, and these were exhibited at the Flower Show on May 7, the prize winners being at the same time notified.

The judges were Messrs. WHITTON and MCHATTIE, superintendents respectively of the Glasgow and Edinburgh Public Gardens. The design selected for the 1st prize (£25), was that of Mr. ALEXANDER TROTTER, Coallaton Gardens, Whitleigh, Ireland. The plan was characterised by not a little originality in altering the natural condition of the ground to make it suit the ideas of the landscapist, the old quarry, for instance, in the sketch plan having been altered into a lake by diverting into it the stream that flows through the ground. An aquatic garden was also formed by means of the same stream. The kitchen-garden, forcing-houses, and offices were disposed at the north-west corner, and walks and roads were arranged in nicely flowery curves and in well placed positions. The 2nd prize was awarded to the plan of Mr. THOMAS SMITH, Cambusdoon Gardens, Ayr. Three designs were commended, that of Mr. JOHN STEWART, Allon House, Allon, being in many respects very superior, showing perhaps in a greater degree than any other the complete grasp the designer had of his subject. Mr. R. BROWN, Colly Gardens, Gate House, and Mr. FRANK PHILIP, Philiphaugh, Selkirk, were the others commended. The competition can truly be said to have been a success, and we understand the prizes are to be offered again next year.

CHESTER PAXTON.

The Hon. Secretary desires us to inform our readers that the following exhibits were inadvertently omitted from the report of the annual spring show which appeared in our issue for April 26, but it must always be remembered that we do not in any case desire to print a complete catalogue of exhibits.

From Miss HUMBERSTON, Newton Hall (per R. Wakefield, gr.), there was a large and beautiful collection of cutblooms, consisting of *Richardias*, *Azaleas*, *Camellias*, *Cinerarias*, &c. Mr. Wakefield also showed *Gentiana acaulis* in fine form, which was greatly admired. Mr. J. WYNNE-FROULKES was represented by a collection of *Narcissus*, all of which were particularly fine, especially for a town garden; and Mrs. AMBROSE DIXON by some beautiful examples of the popular *Star Cineraria*, *Richardias*, and *Grape Hyacinths*. Mrs. WILLIS TAYLOR, Curzon Park, and Mr. EDWD. DIXON, Littleton (per Mr. John Dutton, gr.), were both new exhibitors. The former sent some fine examples of *Daffodils*, and the latter a pretty collection, consisting of *Dentzias*, *Mignonette*, and *Daffodils*. A nice collection of *Daffodils* and *Hyacinths* was sent by Mr. JOHN WYNNE, of Waverton.

Both Messrs. DICKSONS, Ltd., and Messrs. MCHATTIE sent excellent collections, conspicuous in Messrs. DICKSONS' being the well-known *Sir Watkin Daffodil*, staged in fine form, also other choice varieties, including *Queen of Spain*, *Mary Anderson*, and *Glory of Leiden*. The exhibit of Messrs. MCHATTIE consisted of named *Daffodils*, *Hyacinths*, *Polyanthus*, and a beautiful collection of single *Anemones*.

SCOTLAND.

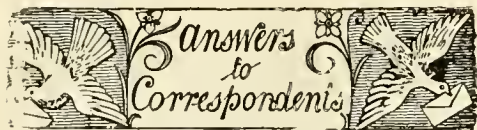
FORESTRY AT TORPHINS.

COLONEL BAILEY, Lecturer on Forestry in Edinburgh University, and late President of the Scottish Arboricultural Society, has just concluded, under the auspices of the Technical Instruction Branch of the Aberdeen County Education Committee, a most instructive and interesting course of lectures on Forestry at Torphins, Aberdeenshire. The course is the first of the kind given, not only in the county of Aberdeen, but in Scotland, and reflects credit on those who have initiated the lectures. The lectures were given under the following heads:—(1) General Principles; (2) Sowing and Planting; (3) Tending; (4) Protection. Colonel Bailey is a forestry expert, and the lectures were lucidly and gracefully delivered. He covered a wide range of the subject in the four lectures, and gave very many hints that could not fail to be of immense value to those who grow timber on a large scale, as regards laying out, the kinds of trees to plant, mode of planting, and the after care of them. A large number of diagrams were brought into requisition to illustrate various points, and each night's lecture was further illustrated by a number of lantern-slides, which were thrown on the screen, and described by the lecturer. That there is a wide field for such lectures in Scotland goes without saying, because, as Colonel Bailey pointed out, the industry of timber-growing in the far North is mainly pursued in a spasmodic and disconnected manner by private individuals, with the result that no full and steady supply of good timber is forthcoming. The development of forestry would not only provide employment for a large number of persons, and arrest the migration of the people from the country to the towns, but prove a source of revenue to owners of land, and help more largely to furnish the necessary timber supply required by this country, and for which we pay to our neighbours over £20,000,000 per annum.

Obituary.

ALBERT WALTER WHALE.—We have to record the death of Mr. Albert Walter Whale, a partner in the well-known firm of Messrs. Dickson & Robinson, Manchester, which took place at his residence on April 28, after a long illness and much suffering.

J. C. MANSEL-PLYDELL.—The death on Saturday, May 3, in his eighty-fourth year, of this gentleman is announced. Mr. Mansel-Plydell was a country gentleman of Dorsetshire, a keen naturalist, and an accomplished archaeologist. He was the author of a book on the *Flora of Dorsetshire*.



**** EDITOR AND PUBLISHER.**—Our correspondents would obviate delay in obtaining answers to their communications, and save much 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, should be directed to the EDITOR. The two departments, publishing and editorial, are quite distinct, and much unnecessary delay and confusion arises when letters are misdirected.

BOOKS: *R. C. Manual of Coniferous Plants.* A second edition has been published, and it is a very good one. Apply to Messrs. J. Veitch & Sons, Royal Exotic Nurseries, King's Road, Chelsea, S.W.

CATILEYA INTERMEDIA: *E. W. D.* Why some Orchids are more subject to deformity than others, we do not know. In our experience, *C. intermedia* is very subject to this and similar changes. In your flower the two side petals have become united to the column and the lip is quite absent.

CORONATION TREES, AND HOW TO PREPARE THEM: *Ignoramus.* Unless trees of deciduous species have been growing in tubs, baskets, or pots since April, at the latest, it will be useless to plant them late in June. Conifers, if they have been transplanted, as is usual in nurseries every second or third year, if removed from the soil carefully with a good compact ball, will succeed if syringed night and morning in dry weather, and the soil kept moist. Of course, if Conifers were potted or tubbed, or even put into baskets, the planting would be absolutely safe. We should not hesitate to plant any of the Holly family, if the root-mass could be lifted intact from out of the soil, and without falling to pieces then or afterwards. From the present till the end of June the time is too short for preparation.

CORRECTION. Scientific Committee, p. 297, last issue, col. B, Peach-blossoms; for protogynous and protogeny, read "protogynous and protogyny."

CUCUMBERS HAVING BLACK SPOTS ON THEM: *Apollo.* The black spots are caused by insect punctures. The use of an insecticide should check the evil.

CUCUMBER-PLANT DISEASED: *F. B. and E. A. C.* The yellow spots are caused by the mildew called *Sphaerotheca Castagnei*. Spraying with rose-coloured permanganate of potash would be beneficial; but the most important thing to attend to is to give a little more ventilation and harden the leaves, which are at present so soft and waterlogged as to be unable to resist the attack of any fungus.

FUNGUS: *W. P. Bound.* What you send is the common Morel, *Morchella esculenta*. It is good to eat, and as it is unlike every thing else, there will be no danger in eating it.

MATERIAL FOR FUMIGATING MUSCAT OF ALEXANDRIA VINES INFESTED WITH THRIPS: *Bath.* We have not heard any complaints concerning the use of the N.L.-All compound in vineries, and if employed some months before the Grapes are ripe, and in moderate doses, it would cause no damage to the leaves or fruit. If you may not use it, you must diligently syringe the bunches if these are what the thrips infest. The insects have been introduced to the vine by plants in pots brought into it without first thoroughly cleansing them.

LANDSCAPE GARDENING: *D. B.* You might enquire of Mr. Thos. H. Mawson, of Windermere, or Messrs. Barron & Sons, Elvaston, Borrowash, Derby, who may take pupils. They are resident not far distant from your town.

LILIUM CANDIDUM DISEASED: *W. J.* The plants are attacked by the *Botrytis* form of *Sclerotinia*, which forms orange-brown and buff specks on the stem, leaves, and buds of the plant. See Marshall Ward in *Annals of Botany*, vol. ii., p. 319, pl. xx-xxiv., 1889. Let leaves, stems, &c., be removed from the bulb and burned forthwith. The bulbs might be taken up and buried for some time in a paper bag or jar containing flowers-of-sulphur.

MILDEW IN A ROSE-HOUSE: *Enquirer.* Slightly moisten the leaves of the plants, then forthwith apply flowers-of-sulphur by means of a sulphurator or dredger; and omit to syringe the plants for a week.

MOULD ON NARCISSUS: *C. W. D.* The fungus is a *Botrytis* that passes the winter in the soil, and attacks the tender growth in the spring. The most practical remedy is to remove the old surface soil and replace it by fresh, mixed with kainit, before the bulbs begin to move.

NAMES OF PLANTS: *E. B.* 1, Cedar of Lebanon (*Cedrus Libani*); 2, *Tsuga canadensis* (Hemlock Spruce); 3, *Cupressus Goveniana*; 4, *Berberis Darwini*; 5, *Libocedrus chilensis*; 6, one of the many forms of *Cupressus Lawsoniana*.—*L. P.* 1, a variety of the common Yew; 2, *Taxus adpressa*; 3, *Cephalotaxus*, probably *C. pedunculata*; 4, *Taxodium sempervirens*; 5, *Juniperus virginiana*, probably; 6, *Arum italicum*.—*Bassett.* *Rhododendron Falconeri*.—*E. V. B.* *Potentilla fragariastrum*.—*G. D.* *Lithospermum purpureo-ceruleum* (probably, but specimen very poor); *Teucrium fruticans*.—*W. P. L. S.* 1, *Ribes aureum*; 2, *Cornus mas*.—*Oncid.* 1, *Leucojum vernum*; 2, *Ornithogalum nutans*; 3, seedling variety of *Ribes sanguineum*; 4, *Pieris floribunda*.—*B.* 1, a Cedar, apparently the Deodar; 3, *Cupressus Goveniana*.—*J. R. Pearson & Son.* *Oxalis Ortgiesii*, *L.*—*Ed. Mauley.* *Trillium sessile*; *Fritillaria latifolia*.—*Amateur.* 1, *Jacobinia coccinea*, more generally known in gardens as *Justicia carnea*; 2, *Celsia cretica*; 3, *Streptosolen Jamesoni*; 4, *Aubrietia deltoidea purpurea*; 5, *Iberis sempervirens*; 6, *Saxifraga granulata flore pleno*; 7, *Saxifraga moschata*.—*Bucks.* *Bilbergia nutans*.—*T. A.* *Cyperus longus*.—*E. S.* *Convolvulus Cneorum*.—*A. C. T.* *Erythrina crista-galli*.—*G. B.* 1, *Scolopendrium vulgare*; 2, *Lomaria spicant*; 3, *Asplenium trichomanes*; 4, *Lastrea rigida*; 5, *Polypodium vulgare*; 6, *Asplenium Adiantum nigrum*; 7, *Lastrea filix-mas*.—*R. H. G.* 1, *Epimedium rubrum*; 2, *Epimedium pinnatum*; 3, *Prunus chinensis flore pleno*; 4, *Mertensia alpina*; 5, *Omphalodes verna*.—*A. B.* 1, *Ribes aureum*; 2, *Polypodium vulgare cambricum*; 3, *Epimedium alpinum*; 4, *Santolina incana*; 5, *Lavandula dentata*.—*G. W. C.* *Dendrobium cariniferum*, and *Ceologyne Parishii*.

NOTICE TO LEAVE SITUATION: *Wanstead Flat.* You are entitled to receive and give one month's notice. Yes, to your second question, if the under gardener was kept on after the week's trial for some months; this length of service showing that he was considered a suitable person for the post.

PÆONY: *Jas. Robertson.* There is nothing to show what has caused the base of stem to rot. Have you examined the roots?

TOMATOS: *T. B.* We can find no evidence of fungus, or disease of any kind. If you have badly affected specimens, you may send again.

"TROPICAL AGRICULTURIST": *Scotsman.* The offices are at Colombo, Ceylon.

TWIN-FLOWERED CALLA: *J. W. F. and E. J. B.* By no means an uncommon condition. It is probably due to an excess of stimulating manures.

WOODLICE IN VINERIES: *Johnstone.* There are various methods of trapping these troublesome insects. One of the best is to afford hiding places into which they can retreat

during the day; bunches of damp hay put loosely into 6-inch flower-pots, and roofing-slates raised above the ground about 1 inch serving the purpose. The insects found in or under these retreats should be collected every morning. Potatoes cut in half, and the cut surface scooped out, form good baits. Clear out all matter likely to harbour the insects, pour boiling water into all crevices at the foot of walls, doing this at night, the insects bolting to such places when a light is brought into the house.

YEW, &c.: *Omega.* What you send are the male flowers of the Yew; the female flowers are generally, but not invariably, produced on another tree. A similar state of things occurs in Hollies. Loudon's *Arboretum* was first published in 1837.

COMMUNICATIONS RECEIVED.—*A. H.*—*J. H.*, Trinidad, enquiries are in progress.—*T. F. T.*—*D.*—*Prof. Kränzl.*, Berlin—*Watkins & Simpson*—*P. L. H.*—*G. D.*—*Subscriber*—*J. E. J.*—*S. G. S.*—*Roseder*—*Felix Woods*—*Very anxious*—*P. J. P.*—*G. E. M.*—*H. S. T.*—*C. H.*—*J. F. McL.*—*Z. Zimmerman*—*A. D.*—*Peier Barr*—*Rev. C. W. Dod*—*Hurst & Son*—*J. Cowie*—*Mrs. G.*—*J. W. Foulkes*—*A. K.*—*H. Gandy*—*G. N.*—*J. Jeffrey*—*W. C. W.*—*J. Bunyon*.

PHOTOGRAPHS RECEIVED AND UNDER CONSIDERATION.—*C. O. L. P.*, Funchal, Madeira.

GARDENING APPOINTMENTS.

MR. THOS. BROWN, for the past six years general Foreman at Wickham Hall Gardens, West Wickham, Kent, as Head Gardener to **SAMUEL P. PAGE, Esq.**, Mottingham Hall, near Eltham, Kent, entering on his duties on May 3.

MR. J. KEIR, for over three years Gardener at Veulaw, Peebles, as Head Gardener to Captain W. H. FIFE, Langton Hall, Northallerton, Yorkshire.

MR. C. FORD, for the past two years Gardener at Heathfield, W. Croydon, as Head Gardener to Mrs. THURBURN, Hales Hall, Market Drayton, Shropshire.

MR. ARTHUR J. RYDER, recently Head Gardener at Brimcote Hall, Nottingham, as Head Gardener to **ARTHUR J. NORRIS, Esq.**, Longshaw, Chipstead, Surrey.

MR. WM. ARTHUR, for the past three years Gardener to **F. B. ATKINSON, Esq.**, at Cresswell Hall, Morpeth, as Gardener to the same Gentleman at Gallowhill Hall, Morpeth.

MR. F. BEARDALL, late Foreman in the Gardens, Mote Park, Maidstone, as Gardener to **Col. PITT**, Hayle Place, Maidstone.

MR. WILLIAM HUNT, late head gardener at Charleville Park, Charleville, Co. Cork, as head gardener to **Captain W. MURRAY THRIEPLAND**, Fingask Castle, Errol, Perthshire.

MR. T. P. DAVIES, until recently Head Gardener at The Rock, Bewdley, as Head Gardener to **S. H. COWPER-COLES, Esq.**, Pennyarth, Crickhowell; he commenced his duties on April 21.

MR. A. W. SOUTHARD, for eleven years Gardener at Langly Park, Sutton, Surrey, as Head Gardener to **G. K. WRIGHT, Esq.**, Stambourne, Sutton, Surrey.

MR. GEORGE MANN, for the past two years Foreman in the Nursery of **Mr. W. REED**, Portslade, as Head Gardener to **G. DUDENEY, Esq.**, East Hill House, Portslade, Brighton.

MR. FRANK BRIGGS, for three years Foreman in the Gardens, Wallington Hall, Cambo, Northumberland, as Gardener to **F. H. BURN, Esq.**, Bolam Hall, Belsay, Northumberland.

MR. F. WHICKER, for the last eight years gardener to the late **H. C. JONSON, Esq.**, Summer Hill House, Kidderminster, as head gardener to **B. J. H. FORDER, Esq.**, Everton Grange, Lymington, Hants.

CATALOGUES RECEIVED.

FOREIGN.

Chantrier Frères, Morte-fontaine, Plailly, France.—Plants.

HORTICULTURAL BUILDINGS.

Messenger & Co., Ltd., Loughborough, London Office, 122, Victoria Street, Westminster.

PLANTS.

DICKSONS, LTD., The Royal Nurseries, Chester—Bedding and Border Plants, Dahlias, &c.

E. P. DIXON & SONS, Hull—Carnations, Chrysanthemums, Dahlias, Roses, &c.

CLARK BROTHERS & Co., 65, Scotch Street, Carlisle—Summer Flowering Plants and Florists' Flowers.

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.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

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

THE Gardeners' Chronicle

No. 803.—SATURDAY, MAY 17, 1902.

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| View of Hippeastrums in Palm-house, Sefton Park, Liverpool (Supplement) | |

JOHN PARKINSON.

HAS the debt which horticulture and botany owe to the apothecaries of London been ever duly recognised? True, it is to physicians, men of university training, that we are indebted for the early commentaries on Theophrastus and Dioscorides, and the first attempts to identify the medicinal plants of the ancients; but in England it was mainly to three London apothecaries, John Gerard, Thomas Johnson, and John Parkinson, that the seventeenth century owed its first comprehensive knowledge of the vegetable kingdom. Several Englishmen had written on gardening in the sixteenth century, such as Thomas Hill, whose *Profitable Art of Gardening* was printed in 1574; William Lawson, who in 1597 published *The New Orchard and Garden*; and Sir Hugh Platt, whose *Garden of Eden* first appeared in 1600; but Parkinson was the first English writer who, as Pulteney says, "separately described and figured the subjects of the flower garden." As he himself says of his predecessors, "None of them have particularly severed those that are beautiful flower plants, fit to store a garden of delight and pleasure, from the wilde and untill." It was, no doubt, this comprehensiveness that made Gerard's *Herball*, as revised by Johnson, survive as the best work of its kind for so long a period, for Parkinson's two books supplement each

other; but it is as a horticultural writer that Parkinson is chiefly remembered, and to his *Paradise* that he owes his modern fame.

Born in 1567, probably in Nottinghamshire, Parkinson was settled in London as an apothecary before 1616, and had, then, or not many years later, a garden "well stored with rarities" in Long Acre. That he had risen to a position of repute in his profession is clear from mention of him by Lobel and by Johnson, from his being appointed apothecary to James I. and "King's Herbarist," or "Botanicus Regius Primarius" to his successor; but though he mentions that he had long had his work in hand, it was not until 1629, when he had already reached his sixty-third year, that the *Paradise* appeared. Its quaint full title runs "*Paradisi in sole paradisus terrestris*, or A Garden of all sorts of Pleasant Flowers, which our English ayre will permitt to be noursed up, with A Kitchen Garden of all manner of herbes, rootes, and fruites, for meate or sause, used with us, and An Orchard of all sorte of fruit-bearing Trees and shrubbes fit for our Land; together With the right orderinge, planting, and preserving of them, and their uses and vertues." This title, which, it may not be superfluous to explain, is a pun upon the author's name, meaning "Park-in-sun's terrestrial paradise," occurs on a remarkable engraved frontispiece of Adam and Eve in Eden, surrounded by a great variety of trees and flowering plants, prominent among which is that interesting myth the "Vegetable Lamb." The frontispiece is signed "A. Switzer," and is followed by a printed title differently phrased, a dedication to Queen Henrietta Maria, a Latin prefatory letter from Sir Theodore Mayerne, the author's Epistle "To the courteous reader," several complimentary Latin poems, one of which is by Johnson, the editor of Gerard's *Herball*, and a portrait of the author. The body of the work consists of nine chapters (pp. 1—25) devoted to "The Ordering of the Garden of Pleasure," a hundred and thirty-three (pp. 27—459) to "The Garden of Pleasant Flowers," i.e., to the description of flowering plants, followed by the second part which contains seven chapters (pp. 461—472) on "The Ordering of the Kitchen-Garden," and sixty-three (pp. 473—533) entitled "The Kitchen-Garden," similarly descriptive; and this again by the third part, containing eleven chapters (pp. 535—555) on "The Ordering of the Orchard," twenty-four (pp. 557—598) on "The Orchard," and "A Corollarie" of "trees that beare no fruit fit to bee eaten" (pp. 598—612). In all, nearly a thousand plants are described, and there are 109 whole page plates including woodcuts of 780 plants. These are in many cases copied from Clusius or Lobel, and though often excellent examples of engraving are but poor as drawings, being on the whole much inferior to the cuts in Gerard. They appear to have been specially engraved in England for Parkinson's work, while those of his predecessor were obtained from abroad. "The *Paradise* is," says Pulteney, "a valuable curiosity, as exhibiting the most compleat view of the extent of the English garden at the beginning of the [seventeenth] century. Inter-tropical productions had been but sparingly imported. The real stove plants are very rare throughout the book. There are some

American species, and particularly from Virginia, as being a part of that continent with which England had the most frequent intercourse. But the principal productions of the English gardens were exotic European and Grecian plants, some Asiatic, and a few from the northern coasts of Africa." For the Virginian and some other species Parkinson was indebted to his "very good friend" . . . "that painfull industrious searcher and lover of all Nature's varieties, John Tradescant," and for those from Africa and southern Europe to Dr. Guillaume Boel, a native of the Low Countries, who travelled in Spain "almost wholly," says Parkinson, "on my charge," in Barbary, and in Germany. Only seven exotic species, however, are directly accredited to Parkinson as of his introduction; but it may surprise a modern gardener to learn that he could enumerate sixteen species and 120 varieties of Tulips, sixty Anemones, over ninety Narcissi, fifty Hyacinths, fifty Carnations, twenty Pinks, thirty Crocuses, over forty Irises, over twenty Peaches, thirty Cherries, and over sixty varieties each of the Apple, the Pear, and the Plum.

After his death a so-called "second impression" of the *Paradise*, "much corrected and enlarged," was issued in 1656. It was published by a different printer, the colophon of the first edition being "Printed by Homfrey Lownes and Robert Young at the signe of the Starre on Bread-street-hill," whilst the second is stated to be "Printed by R. N., and are to be sold by Richard Thrale at his shop at the signe of the Cross-Keys at S. Pauls-gate, going into Cheap-side"; but except the ornamental headings to the parts, and the initial letters, there is little to indicate that the type was ever reset. The *Paradise*, like many of the other early books on botany and gardening, now fetches steadily increasing prices in the auction-room; but, as in the case of Gilbert White's *Natural History of Selborne*, this popularity is certainly not due to the value of the information to be obtained from the work; neither is it, I think, due to mere caprice of fashion, nor, quaint and crisp as is its diction, is it, I venture to add, due to purely literary style. There is, in both cases, the charm of a self-revealing personality—in both cases that of an elderly man—so that, unconsciously perhaps, it is the dapper curate of Selborne, or that "honest root-gatherer," the apothecary of Long Acre, and not the author of the *Paradise*, or of the *Natural History*, that attracts us.

Separated as they were in date of publication by no fewer than eleven years, and differing so widely as they do in method, it is not surprising that many historians and bibliographers of botany have failed to notice that Parkinson's *Paradise* and his *Theatrum Botanicum* are in origin but parts of one work. The Epistle to the Reader, prefixed to the former volume, concludes, "Which, if well accepted, I . . . may the sooner hasten the fourth part, A Garden of Simples, which will be quiet no longer at home than that it can bring his master news of fair weather for the journey." This fourth part was the "Theatrum Botanicum, The Theater of Plantes; or, An Universall and Compleate Herball," published in 1640, when its author had reached the advanced age of seventy-three. After Lobel's

death, in 1616, Parkinson had purchased his unpublished manuscripts, and, as the passage just quoted shows, his own work had long been in active preparation; but, in the meanwhile, Johnson, the friend who had contributed complimentary verses in 1629, had, in 1633, brought out his edition of Gerard, in which, according to Parkinson's bitter complaint, he anticipated some descriptions which could only have been made from the Long Acre garden. Possibly it was the cutting of the 2,600 wood-blocks, mainly copied from those in Gerard, that delayed Parkinson's work for seven years more; but when it did appear, it contained nearly 3,800 species, as against Johnson's 2,850 including the Egyptian plants recorded by Alpinus in 1592, and the Canadian ones published by Cornutus in 1635, besides many East and West Indian drugs from the works of D'Acosta, Monardes, and Garcias ab Horto. In synonymy he had incorporated almost the whole of Bauhin's "Pinax," whilst many of the descriptions were undoubtedly original. Even in his *Paradisus*, Parkinson had shown himself to be an apothecary first and a gardener afterwards, carefully specifying the "vertues," of the plants, while, as Pulteney complains, "Less is spoken of the culture than seems to be requisite." It may, therefore, be readily understood that in the more distinctively pharmacological portion of his task these "vertues" occupy a large space.

His work is both more extensive and more original than that of Johnson, the "Theatrum" alone containing upwards of 1,700 pages, nearly 100 more than Johnson's *Gerard*; but it is to be regretted that neither botanist made any advance in classification. Parkinson, in fact, in this respect abandoned the improvements made by Lobel in 1605, in favour of a scheme based upon that of Dodoëns, founded upon medicinal qualities, habit and place of growth.

Parkinson died in London in August, 1650, and was buried on the 6th of that month at St. Martin's-in-the-Fields, so that he may well be called a Londoner; and though Pulteney says apologetically that his profession prevented "distant herborizings," thirteen species stand to his credit in Messrs. Trimen & Dyer's *Flora* as first records for Middlesex.

Our interest in the man is not hampered in Parkinson's case as it is in that of Gilbert White, by the absence of a portrait, for in addition to the one already mentioned in the *Paradisus* there is another in W. Marshall's engraved frontispiece to the *Theatrum* representing him no doubt, at the age he was at the date of its publication. The pleasing and younger-looking presentment in Mrs. Ewing's *Mary's Meadow* is it must be admitted, purely imaginary; as is also to a very great extent the beautiful statue recently erected by Mr. Thompson in the Palm-house, Sefton Park, Liverpool, for the opportunity of representing which we are indebted to Mr. Ker. But if, for botanists, Johnson and Parkinson have gained a subordinate immortality by the systematic quotation of their works by Ray, for the general reader undoubtedly Parkinson was discovered by Mrs. Ewing's fascinating little story. We can now say with confidence, in the words prefixed by one John Harmar, of Oxford, to the *Theatrum*, "No night of Age shall cloude bright Parkinson in sunne." G. S. Boulger.

CULTURAL MEMORANDA.

RICHARDIA ELLIOTIANA.

By the seemingly easy manner in which this now well-known subject is produced, one would suppose that its cultivation was a matter requiring but little skill; yet it is a plant which some gardeners fail to grow well, and during the past season I have known of several cases of failure. My method of



JOHN PARKINSON.

The Statue in the Palm-house, Sefton Park, Liverpool.
(From a photograph by Mr. Ker.)

cultivation may afford useful hints to those who may not have had success with this species. The plants that are intended to produce their spathes in April and May are started about January 15, and the tubers placed in pots of such a size as will permit of a shift being afforded when necessary. The soil should consist of turfy-loam, to which a small quantity of dissolved bones and soot are added, and enough sand and bog-earth as will keep the whole sweet and porous. The pots are stood on a bed of coal-ashes in a stove,

and no water is applied till growth shows above the soil, and then but sparingly; the young foliage being, however, frequently syringed. When the soil is penetrated with roots, repot the plants and stand them near the glass; and when the soil again becomes filled with roots, liquid-manure should be applied. Unless the spathes are wanted at an earlier date than that mentioned, place the plants in an intermediate-house in a position where cold draughts cannot reach them, or the leaves will soon be disfigured. Keep the plants quite free from insects by fumigation. Should the spadices be left on the plants for the production of seeds, liquid-manure may be afforded occasionally, otherwise the treatment accorded *Richardias* generally is suitable; but not till the last leaf has dropped should they suffer lack of water at the root.

Here, the stock of tubers is stored in sand in the same temperature as *Gloxinias*, *Gesneras*, &c., are kept; and it is rarely that a tuber perishes. I am always raising plants from seed saved from some of our strongest plants, but in no case has any seedling been better than the parent. J. F. McLeod, Dover House Gardens, Rochampton.

SOLANUM CAPSICASTRUM.

Assuming the gardener cut back his plants of this species early last month, leaving about an inch of last season's growth, and placed them in a cold pit or frame, and syringed them twice a day, the plants will now be pushing new growth, and may be shaken out of the soil, and repotted in pots of the same size, well crocking them, as the plant requires much water when in active growth and out-of-doors. Sound loam two-thirds, and leaf-soil one-third, with a small quantity of bone-meal and coarse sand, makes a good potting mixture. Pot firmly, and place the plants in the frame; shade during the strong sunshine, and keep close for four or five days. When the plants commence to grow, place them out-of-doors in a sunny position on a hard bottom, and fill up around the pots with spent Mushroom-bed manure, or that from an exhausted hot-bed, covering the pots completely. Generally, it is necessary to rub off some of the shoots that come away, but retain the stronger, and pinch out the points when 2 inches long. As soon as the flowers begin to expand, and right up to the time the berries begin to colour, weak soot-water may alternate with clean water. In some gardens the plants must be enclosed in netting, to keep the birds from eating the berries when they begin to ripen. Let the plants be housed towards the end of October, placing them in a light position, and if required early, afford slight warmth, in order to ripen the fruits. Cuttings should be struck annually in January or February on mild bottom-heat. When rooted, pot singly in large 60's, and stop the shoots thrice, otherwise treat like the old plants. Some gardeners raise their plants from seed, sowing in January, but the habit of the plants is too straggly for most gardeners, although others admire the lack of primness, and the greater freedom and *négligé* appearance of such plants. J. Mayne, Bicton.

HERBACEOUS CALCEOLARIAS.

The plants should receive great attention with regard to affording water and keeping the foliage free from aphides, which soon disfigure the foliage and ruin the plants, if not kept in check. Keep the house or pit rather dry for a day or two, then fumigate lightly at intervals of a day or two with XL or tobacco. The plants should never be allowed to suffer lack of water at the root, moisture in the air,

or proper ventilation. The plants really do best on a cool moist bed of coal-ashes in a brick-pit or wooden frame at this date.

COCKSCOMBS.

These plants are useful for a variety of decorative purposes. They delight in warmth and moisture, and should be placed near the glass so as to induce sturdiness, and large, even combs. The best kind of soil is peat and leaf-mould, with some sand to give it porosity, and the plants must not suffer want of water at the root when roots become numerous, or red-spider will be sure to infest them. When repotting the plants, keep them low down in the pots, even if the tap-root must be shortened to do it.

CAMPANULA PYRAMIDALIS.

Gardeners may not generally know that this plant may be potted up from the border with success when the spikes are several inches in height; this I have repeatedly practised with good results. If the soil is dry, apply water a day before they are dug up; pot them quickly, and stand in a shady spot, or a cold pit or frame. Afford water, and twice or thrice daily syringe them lightly in dry weather; in time of strong sunshine apply shading. *H. Markham, Wrotham Park, Barnet.*

COLONIAL NOTES.

HETEROPTERIS PURPUREA.

ONE of the chief sources of food in Grenada is fish obtained from the sea. Among other methods these are caught in wicker-made pots formed of split Roseau (*Gynerium saccharoides*). Attached to each pot is a float, which may consist of a piece of Bamboo, or something similar, and is placed there for the purpose of marking where the fish-pot lies at the bottom of the water. The float is connected by ordinary rope bought from the shops, or, more frequently, Nature's rope, made from climbing or twining plants. *Heteropteris purpurea*, the "Liane noire" (= Black Vine), that grows along our seaboard, is the plant from which the liane (rope) is oftentimes cut. There are also two others known to me in this island, namely, *Bignonia unguis-hæti* and *Hiræa* (*Mascagnia*) *Simsiana*. *W. E. Broadway, Grenada.*

WEST INDIAN BULLETIN.

The last issued part of this publication, which is the official Journal of the Imperial Agricultural Department for the West Indies, contains a record of the doings and sayings of the Annual Conference held at Barbados in January last. At this Conference representative agriculturists and men of science from all the West India Islands met under the presidency of Dr. Morris, the Imperial Commissioner. Matters relating to agriculture, principally to Sugar-cane growing, were discussed, and ideas interchanged, to the great benefit of all concerned. The organisation set on foot with so much zeal and hopefulness by Dr. Morris is clearly showing great promise of utility, both directly and indirectly. Continuous work, patience, and hopefulness, are the great weapons wherewith to fight apathy, ignorance, and occasional discouragement, and there is every reason to hope that substantial results will follow the methods adopted. One of the main advantages of the organisation is that it is now possible to employ specialists confining their attention to definite points with a wide range of knowledge and experience of the West Indies. These officers are regularly on tour collecting material, and carrying on investigations. They have, in addition, well equipped laboratories and works of reference at hand.

RECORDS OF THE SYDNEY BOTANIC GARDEN.

The *Agricultural Gazette of New South Wales* for February contains some interesting records of the Sydney Botanic Garden, brought together by Mr. J. H. Maiden:—"The Sydney Botanic Garden is classic ground. Its area includes the site of the first farm where corn was grown for the infant colony, where fruit-trees of all kinds, Apples, Oranges, Olives, Vines, and Bananas were first acclimatised, where it was shown that the Cotton and innumerable economic plants could grow in New South Wales, while by means of Wardian cases and glasshouses it was the nursery for establishing and propagating valuable tropical economic plants from what is now Queensland and Northern Australia."

Mr. Maiden gives interesting lists of vegetable and other lists sent to the colony seventy years ago, when the voyage from England occupied many months, and was likely to prove fatal to perishable seeds.

The story of the introduction of the Cabbage-tree of the tropics, and of the Busby Vines, is interesting to modern planters, who may, in fact, be recommended to peruse the whole of the paper, from which we here quote, that they may see and acknowledge how much they owe to pioneers in New South Wales.

ALPINE GARDEN.

AURICULA CELTIC KING.

THIS handsome, single, yellow variety makes an excellent subject for pot culture. It lacks two properties to which the Auricula-specialist attaches value, viz., a thrum eye, for the pistil protrudes somewhat above the tube; and a rounded edge to the flower, for it is notched and not properly circular, and there is a slight zone of thin white paste round the tube. But it is of vigorous free growth, has handsome mealed foliage, it throws bold trusses on long flower-stalks, and is very fragrant. It deserves to take high rank as a spring-flowering plant for growing in pots. It is as hardy as the common border alpine Auricula, for it has stood out-of-doors all the winter, and is now flowering freely in the open ground. It was raised by the Rev. J. Jacob, Whitewell Rectory, Whitechurch, Salop. *R. D.*

ALPINES AT THE EDINBURGH SHOW.

There was a little exhibit of alpine plants that few people would chance to see, sent by Mr. Lindsay, Murrayfield, to the late flower show in Edinburgh. There was, for instance, a very fine form of *Primula aretosis* (ciliata), a seedling of the late Dr. Stuart's, deep clove-crimson in colour; and the true *Primula nivalis* of Pallas, with foliage somewhat lanceolate, shining green on the upper side, and thickly farinose underneath, with flowers of a light purple, a most distinct and pretty species. But the gem of the unassuming collection was a hybrid *Saxifraga*, said to be the result of a cross between *Saxifraga Reidii* and *S. muscoides*, with flowers much larger than the latter, in colour a clear deep rose; its name is *S. Fergusoni*, and the growth is identical with that of the mossy *Saxifragas*. A little plant of the rare *Scilla italica alba* was also exhibited, not however in very good form.

What Mr. Lindsay considers a small-growing form of *Narcissus triandrus pulchellus*, with a shortened perianth, is a wonderfully attractive little thing. Did I wear petticoats, I must have called it a "little love." It increased at a rapid rate at Kames Lodge, and always flowers profusely.

Mr. Lindsay has many other good plants, some of which have not yet got beyond the

garden of their nativity. A seedling of *Primula aretosis*, named "Adonis," was a sample of what was left behind; this was certificated by the Floral Committee. The blooms are double the size of the type, and trusses are produced in so abundant a manner that the foliage is quite hidden. The centre of the flower is of a faint blush tint, which darkens towards the circumference, and it is not impossible that this may prove on further trial a first-class border plant, as well as a fine variety of the above-named species. *B., Scotland.*

PLANT NOTES.

DIOSPYROS TEXANA, SCHEELÉ.

THE flowers of this tree are greenish in colour, and are borne in large numbers during the month of June. At that time the honey-bees may be seen busily working on the flower in great quantities, showing it to be worthy of cultivation in the neighbourhood of apiaries. Two trees are growing in the Botanic Station of Grenada.

BRACHIONIDIUM SHERRINGI, ROLFE.

The mountains of Grenada are not of a great height, the highest being only 2,749 feet, and known by the name of Mount St. Catherine, yet thereon the temperature is quite cold and damp, favouring all forms of vegetation that thrive under such conditions. This Orchid was unknown until Mr. Sherring found it in Grenada not many years since. It has subsequently been collected on Mount St. Catherine and Fedor's Camp. At the latter place it was found flowering and fruiting on June 23, 1896, by me, upon small trees. The flowers are greenish-coloured.

DECASTELMA BROADWAYI.

In the Grand Etang locality of Grenada the writer found for the first time, on April 16, 1895, the above plant twining up among shrubs and trees in the cool, damp woods, and which has eventually turned out to be a new genus of *Aselepiadeæ*. It is a slender grower, which flowers among the branches of small trees. A milky juice runs out from any cut or ruptured part. The flowers are small, white, and clustered together. So far, the fruit has not been seen.

PHILIBERTIA CLAUSA (ASCLEPIAS CLAUSA, JACQUIN).

This is rather a striking plant when flowering. It is one of our wild Grenada swamp-loving plants, and was first collected for our herbarium by Louis De Suze, an *employé* of the Botanic Station, on Belmont Estate, near Lake Antoine, in the parish of St. Patrick, Oct. 12, 1895. We are trying it here under cultivation.

PITCAIRNIA RAMOSA, MEZ.

For planting out on lawns to form a "clump" this is an admirable plant. The red flowers grow upon tall stems, and require staking to keep them from falling upon the ground. But probably the real beauty, with some people, would be the leaves; they are about 1½ in. wide, some 6 feet or more long, and two-coloured above. Down the middle runs a lovely broad band of yellow, contrasted on either side by dark, shining green margins. The edges have tiny prickles. Occasionally one or more very narrow yellow bands are formed beside the central one. Underneath the surface there is clothed with a whitish, mealy substance, which is readily removed by rubbing. In the Grenada Botanic Station we find it does better under partial shade, and screened from high winds. *W. E. Broadway, Grenada.*

ERICA PROPENDENS.

When, nearly two years ago, Messrs. James Veitch & Sons exhibited this variety before the Floral Committee, its existence was almost unknown, and by many it was thought to be a newly introduced novelty. But it is an old plant, having been originally introduced a century ago. When its age became known, it was assumed that the spe-



FIG. 101.—THE FIRST LAWN-MOWING MACHINE, AS PATENTED BY MR. BUDDING AND MANUFACTURED BY MESSRS. RANSOMES, SIMS AND CO., 1832.

(From the "Mechanic's Magazine," August 25, 1832, vol. 17, p. 345.)

cies had fallen out of cultivation through some difficulty in cultivating it. It makes such a charming plant, it is so free flowering and so distinct in character, that there must be some reason for the neglect into which it had fallen. When at the Hassocks Nursery of Messrs. W. Balchin & Sons, I was surprised to see a huge batch of it in large 60-sized pots, as healthy

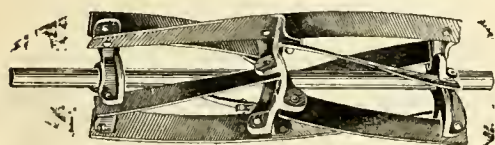


FIG. 102.—RANSOMES' DOUBLE ANGLE CUTTING BARREL.

and vigorous as an Erica could be imagined to be, some in charming bloom, and others fast coming on into flower. The plants averaged from 6 inches in height, they had most of them freely branched, they were well furnished with spikes of attractive soft pink bell-shaped blossoms. Seeing that Mr. W. Richardson, who is an adept in the cultivation of hard-

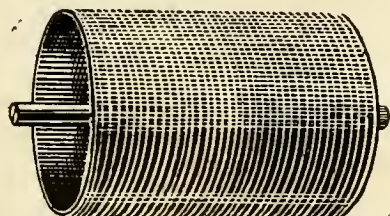


FIG. 103.—RANSOMES' RIBBED OR FLUTED ROLLER.

wooded plants, had but one or two plants from Messrs. Veitch & Sons stock, it would seem to strike freely and grow vigorously when rooted. Judging from what could be seen at Hassocks, I think it will make a very valuable market plant, for to a handsome habit of growth is added a most attractive tint of colour in the flowers. R. D.

DORONICUM PLANTAGINEUM EXCELSUM.

This is a very showy and useful spring-flowering hardy herbaceous plant: it is a free

grower and profuse flowerer; it is erect in habit and branching, attaining to a height of from 2 to 3 feet, according to the depth and fertility of the land in which the plants are growing. The bright yellow flowers with which the individual spikes are crowned are from 2 to 3 inches in diameter, these being thrown well above the fairly large, pale green, broadly lanceolate, serrated leaves. It is very useful—in fact, the best of the species for yielding supplies of flowers for cutting purposes. The plant is easily increased by division of the roots, and although it will do fairly well in any description of soil between clay and peat, the plant, like many other similar plants, will do better in loamy soil of average fertility, and will repay generous treatment. In planting the divisions, make the soil moderately firm about them, and in the absence of rain, water to settle it about the roots. H. W. W.

THE LAWN-MOWER:

ITS CONSTRUCTION AND MANAGEMENT.

The lawn-mower was the capital invention of Mr. Budding, in 1832, and, as will be seen by fig. 101, its construction then differed very slightly from its modern representative. The general arrangement consists of a roller, which supports the machine, and furnishes the driving power, and an arrangement of cog-wheels, a chain, or occasionally smooth wheels, which drive a revolving knife or cutter, which acting against a fixed blade, operate on the grass like a pair of shears. The machine is completed by a small roller in front of the cutters, which regulates the height of the cut, and a box to receive the cut grass, the whole being mounted between two iron frames, which are provided with handles at their extremities for the operator. This is a general description of the ordinary English-built machine, and notwithstanding many novelties, some of which will be described hereafter, it holds its own as a strong and reliable implement for hard work. With the object of explaining many individual peculiarities, I propose to describe briefly various machines, with special reference to those now on the market, although the older forms will not be overlooked, as many of these are still in actual use.

RANSOMES' MACHINES.

The machines made by the well-known house of Messrs. Ransomes, Sims, & Jefferies, of Ipswich, merit the place of honour, as these engineers made the first machine for Mr. Budding in 1832. As a rule, nearly all the mowers, and certainly the older ones built by them, are driven by cog-wheels, although latterly they have introduced a chain-driven machine, which, like all their productions, is carefully designed, and runs very smoothly. The relative merits of the chain and cog-wheel gearing I will explain presently. One of the best known of Messrs. Ransomes' machines is the "Automaton," which will be easily recognised as being one of the earliest to have the gear-wheels enclosed in a case, and consequently protected from dirt and dust. In their more modern machines several rather remarkable features have been introduced, making it very easy to distinguish these mowers from others. One of the most conspicuous of these is the flute roller, which greatly assists the driving power of the machine, and prevents slipping when working on a slope or a bank (see fig. 103). Another is the introduction of springs to the bearings of the cutter (see fig. 104), while a third is an extremely neat form of adjusting the height of the

cut by simply turning two small hand-wheels, without having to use a wrench (see also fig. 104). These peculiarities are certainly worthy of much commendation. One other important improvement, is their patent "double-angle" cutting barrel (see fig. 102), which delivers the cut grass into the centre of the grass-box.

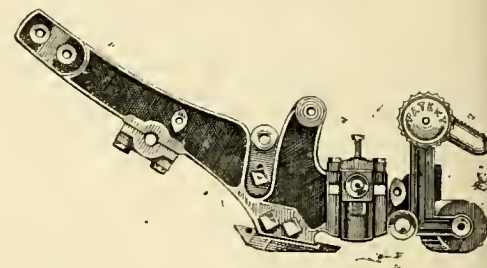


FIG. 104.—RANSOMES' METHOD OF FRONT ROLLER ADJUSTMENT.

SHANKS' MACHINES.

Next in order of date, the machines of Messrs. Shanks & Son merit attention. This old firm is a Scotch one, established at Arbroath, and commenced making lawn-mowers about 1840. A machine built by them in 1842 is illustrated on p. 65 of vol. xxxvii. of the *Mechanic's Magazine*, and only differs from

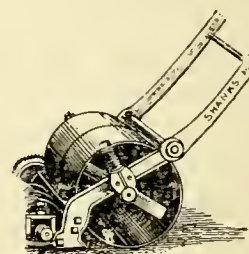


FIG. 105.—SHOWING MESSRS. SHANKS' AXLE SPRINGS.

their modern productions in a slightly different design of framing, the employment of two sets of rollers, and in one or two other small details. Like Messrs. Ransomes, Messrs. Shanks have been strenuous upholders of the cog-wheel system of driving, and like them also the cutters in their machines so driven revolve at a very high speed. A chain-driven

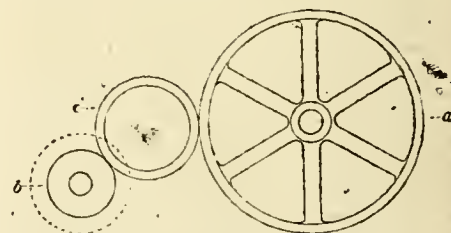


FIG. 106.—MESSRS. BARNARD, BISHOP AND BARNARD'S SYSTEM OF DRIVING BY SMOOTH WHEELS.

machine, however, has been placed by them on the market, and is well liked. Like Messrs. Ransomes, this firm has been quick to recognise the great advantage of a fluted roller, but in this instance the flutes do not run circularly but lengthwise. Another important patented improvement is the application of springs to the roller axle, which gives an exceedingly easy action to the machine, particularly on uneven ground. This, as pointed out by the makers, is a great assistance to large machines used for golf courses (see fig. 105).

MESSRS. GREEN'S MACHINES.

This firm, although not so old as the two already mentioned, has an extensive experience and a well-earned reputation for their machines. While Messrs. Ransomes and Shanks may be said to have been the parents of the cog-wheel driven machine, Messrs. Green originated the chain-gearing system. Briefly, this may be described as the application of a bicycle chain to the purpose—in fact, the lawn-mower chain was the precursor of the pitched chain for cycle driving.*

These are the three oldest firms in the trade, and although there are many other makers deservedly well known, it would be impossible to fully do justice to them in the limits of this article; furthermore, it would be scarcely of interest to do so, as the chief points of English practice are well represented by the before-mentioned firms. One or two very remarkable machines, however, must be mentioned. First the mower made by Messrs. Barnard, Bishop & Barnard, and wherein the driving medium consists of smooth wheels. Fig. 106, p. 320, represents this simple and ingenious device, and it may be mentioned that when used for a machine above 16 inches in width, two sets of wheels were employed—one on either side of the cutting barrel or knife. By reference to the figure it will be seen that *a* has a large wheel fixed to the roller-axle, and *b* a small one on the spindle of the cutter. Between these an intermediate wheel, or more properly a ring, *c* was placed, and this wheel had a slight projecting edge, between which was stretched a thick elastic band or tyre. The wheels *a* and *b* were at such a distance apart that when the machine was pushed forward in the act of cutting, the wheel *c* jammed tightly between them and communicated the motion of the wheel *a* to the cutter spindle. When the machine was drawn back the upward movement of the wheel *a* caused the wheel *c* to move slightly upwards, and consequently the cutter did not revolve. The whole was very simple, and dispensed with the arrangement (to be described later) for permitting the machine to be drawn backward without driving the cutter. These machines are much liked for their silence and smoothness of action.

The second machine, which from its uncommon appearance merits special mention, is one termed the "Archimedian." This was a mower very like Ransomes' "Automaton," as regards driving, but the cutter had only three or four blades, which were very much twisted, even more than the present fashionable "side-wheel" mowers. Another peculiarity was that the cutter was quite open in the centre, giving the machine a curious appearance, but a good feature otherwise, as no place was afforded for grass to lodge or choke, and in this machine this was a necessity, as the cutter was driven at an exceptionally high speed. The writer is not sure if this curious machine is now made.

A few words must be given to the American types, with which recent years have made us familiar, and one of the early forms of these was a machine called the "Easy," in which the place of the usual roller was taken by a kind of skeleton one, or circular cage of light rods or stout wire. This was a good machine, but not so steady in working as the English roller pattern. Mr. Coldwell is credited with the introduction of the lawn-mower into America, and to his ingenuity many of the very neat adjustments and devices on the American machines owe their existence.

At the present time one of the most popular machines imported into England is that made by the firm of Chadburn & Coldwell, and known as the "Excelsior." It is significant,

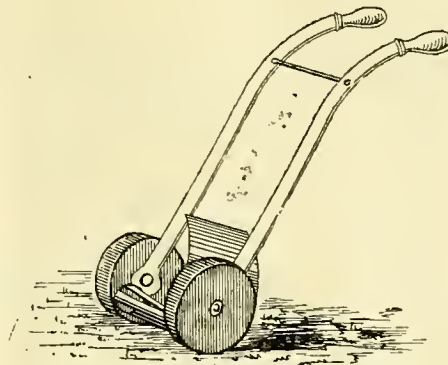


FIG. 107.—"SIDE-WHEEL" MOWING-MACHINE, MADE IN ENGLAND ABOUT 1870.

and highly complimentary to our English engineers, that this machine closely follows their practice, and greatly reminds a casual observer of the lighter-built machines of

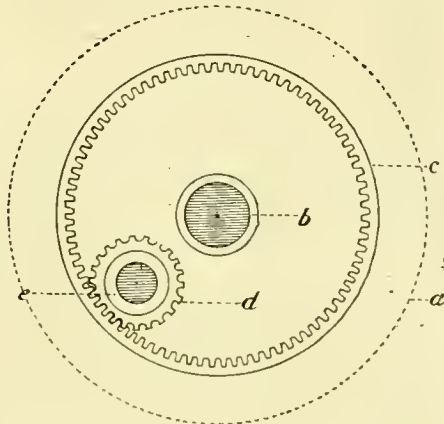


FIG. 108.—METHOD OF DRIVING EMPLOYED ON SIDE-WHEEL LAWN-MOWERS.

- a*, Side-wheel, shown in dotted lines.
- b*, Axle cast on frames.
- c*, Cog-wheel cast with wheel *a*.
- d*, Pinion on cutter-spindle.
- e*, Cutter-spindle.

Messrs. Shanks and Messrs. Ransomes. The "Excelsior," however, although outwardly resembling the English machines, differs in many important points, one of the principal ones

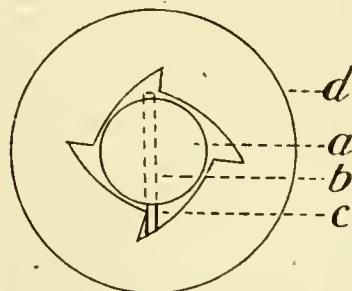


FIG. 109.—RATCHET ARRANGEMENT EMPLOYED ON SIDE-WHEEL MOWERS. (SHOWING BACK VIEW OF PINION.)

- a*, Cutter-spindle.
- b*, Slot through spindle, shown in dotted lines, through which the pawl, *c*, fits loosely.
- d*, Pinion on cutter-spindle.

being the method of adjusting the cutter, which will be described later; the case over the gear-wheels, too, completely covers them, and is really a part of the frame of the machine. In

the smaller sizes there is no axle at all to the roller, which revolves on two pins cast solid with the ends. Another peculiarity is that the device for permitting the machine to be drawn backwards without turning the cutter is not combined in the roller, but on the end of the cutter spindle, or shaft driving it. This device has the drawback that the whole of the wheels connecting the roller with the cutter revolve when the machine is drawn backwards, whereas with the English machines they remain at rest; this, however, is not of so much importance as it appears, owing to the fact of the cog-wheels being so completely enclosed.

Before passing on to describe the various parts of the lawn-mower, reference must be made to an entirely different class of machine which has become very popular of late years, especially for small lawns and grass-plots. This is what is known as the "side-wheel" mower, and differs greatly from the older type in not being provided with a roller properly so-called, but is made with two wheels, one at each side within which the gearing to drive the cutter is arranged very compactly. These machines are very light running and easy to handle, but are not suitable for very narrow strips and edgings. Although this machine is of American origin, it having been brought to perfection by Mr. Coldwell of the well-known firm of Chadburn & Coldwell before mentioned, yet it should be stated that a light machine of this description was made in England in the early "seventies,"—the only difference being that the framing was like the ordinary pattern with the grass box disposed between the frames instead of in front as is usual. This machine never met with the success it deserved, as it was very compact and light in operation. Fig. 107 is a sketch representing the general arrangement.

As regards the "side-wheel" types, it may truly be said their name is legion. In this article the writer can but enumerate the names of those made by the principal firms. These are—

Ransomes.—The "Anglo-Paris" and "Lion" = high class and cheap machines respectively.

Shanks.—The "Talisman." This is a special pattern, being a very high class machine of the side-wheel type. The axle of these wheels extends the whole width of the machine, and the gear wheels are separate from them. In the cheap machine the cog wheel is in one piece with the side-wheel. They also make the "Britannia" and the "Britisher."

Greens.—The "New Monarch" and the "New Century," two very neat machines with several special features.

Crawley & Co. (Sheffield).—The "Victoria."

Birford & Perkins (Peterborough).—The "Beatrice."

It will, of course, be understood that these are only a selection from a great number of English machines, many having peculiarities of their own in small matters, but not differing greatly in general arrangement.

As to American patterns, it will perhaps be sufficient to mention Chadburn & Coldwell's particular types, as really this firm is the most important one exporting machines to England. There are "Our Best," a very cheap pattern, but discontinued some time since, and its place taken by "The Swift" and "The New Model Excelsior," which is their best pattern side-wheel machine.

There are several other American makers who follow the last mentioned firm's practice very closely, and also at least one Canadian maker that is well known on this side of the Atlantic, but the difference is so slight

* See a very interesting little book published by the Abingdon Works Company, of Birmingham—*Chain, and how to use it.*

between them that the older house may be taken as a very fair representative of them.

As regards driving arrangements, nothing can be simpler, owing to the very few parts in the machine. Each side-wheel has cast solid with it a cog-wheel or rather a ring of teeth, and the rim of the wheel overlaps these, and as it runs close to the frame of the machine the gearing is very neatly boxed in. Each of these wheels drives a small wheel or pinion loose on the cutter-spindle, and these pinions have a device, which will be later described and explained, which while permitting the cutter to run when the machine is pushed forward, revolve without driving it when pulled backward. Figs. 108 and 109 show the principle of the "side-wheel" machine, and it will be noted that it does not permit of the cutters being driven at a very high speed; therefore, as regards this point, these machines are about on a level as to results with chain-driven machines. The arrangement usually adopted with the "side-wheel" mowers is to provide them with a long T-shaped wooden handle, and when grass-boxes are used they generally are made to hook or catch on to projections cast on the inside of the frame. *Sydney Russell.*

(To be continued.)

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT CHARDWAR.

THE Orchids come in for much attention in the gardens of G. F. Moore, Esq., at Bourton-on-the-Water, Gloucestershire, most of the glass structures being filled with good selections of the favourite flowers of the day. Rare *Cypripediums* have special attractions for him, his gardener (Mr. Morris) growing them well, the plants becoming very vigorous. Of hybrids and crosses there are numbers of interesting and promising seedlings approaching the flowering age.

Most of the plants considered to be of difficult growth thrive, and notably the section including *Cypripedium bellatulum*, *C. bellatulum album*, *C. niveum*, *C. Godefroyae leucocheilum*, &c., all of which have fine foliage, and freely produce flowers. The yellow-flowered forms of *C. insigne*, viz., *C. i. Sanderæ*, *citrinum*, &c., are well represented; and the finer-coloured forms, of which the large and handsomely blotched *C. insigne*, Harefield Hall variety, used to be considered the best, have now a still finer one of the same class in the Chardwar collection. Other good *Cypripediums* noted, some of which were in flower, were the massive and fine form of *C. × Beekmanni*, and the equally fine *C. × Mooreanum*, somewhat resembling *C. × Beekmanni*, but with the addition of rose-purple colouring and spots in the dorsal sepal; *C. × Nandi*, *C. × Mrs. E. V. Low*, *C. × Olivia*, *C. × Evenor*, *C. callosum Sanderæ*, some excellent large-flowered *C. exul*, *C. × Lathamianum*, *C. × Winnianum*, *C. × Pitcherianum*, and good specimens of many of the favourite species and varieties. A good argument in favour of *Cypripedium* culture is, that in these days, when the roofs of the houses are so much made use of for suspending epiphytal species of Orchids, the *Cypripediums* succeed on the stages in positions far from the roof, which are not as a consequence well adapted for epiphytes.

In one of the *Cattleya*-houses there were noted in flower good forms of the larger-flowered species; also some fine *Lycaste Skinneri*, *Lælia purpurata*, *L. Digbyana*, *Cattleya Mossiæ Wagneri*, *C. aurea*, *C. × Hardyana*, *Lælio-Cattleya × callistoglossa*, and other

Lælio-Cattleyas in rude health. In this rather cool house the plants of *Oncidium Krameri* bears its fine butterfly-like flowers, and keeps in perfect health in a much cooler temperature than is generally afforded.

In an intermediate-house is to be noted a proof of the excellence of the advice recently given in the *Gardeners' Chronicle* about the propagation of *Odontoglossums* from the back pseudo-bulbs by suspending them near the glass of the roof. Formerly Mr. Morris had had results in propagating *Odontoglossums*, but since suspending them, even the pseudo-bulbs having no visible buds have thrust out strong growths.

In one of the houses is a plant of *Cymbidium giganteum*, the surface of the potting-material of which is carrying a dense crop of young plants obtained, it is said, by crossing *C. giganteum* and *Phaius grandifolius*. One of the strongest, growing in a pot, is bearing a stout spike of many large yellow flowers, having reddish markings on the sepals and petals, and showy claret-purple tint on the lip. The flowers resemble those of *Phaius × maculato-grandifolius*, for which Messrs. Jas. Veitch & Sons obtained a First-class Certificate, November 10, 1891. Mr. Moore is as confident as he can be that the seedlings were obtained in the manner indicated, and the seeds sown in the pot in which grows one of the parents.

Among the plants observed in flower or bud were numbers of the white varieties of *Lælia anceps*, and other Mexican *Lælias*, some *Cattleya Trianaei*, including white *C. T. alba*, a good form; *C. Schroderæ*, *C. Lawrenceana*, specimens of *Vanda teres*, thriving on wooden rafts; a selection of the showy *Dendrobiums*, including a number of very satisfactory *D. Phalenopsis*; some *Lælio-Cattleya × elegans*; the pretty yellow and red *Sophro-Lælia × Marriottiana*, some *Pinguicula caudata*, a batch of profusely flowered plants of *Dendrobium atro-violaceum*, one of the specimens having seven strong spikes; a fine basket of the scarlet-flowered *Epiphronitis × Veitchi*, and several *Lælia Digbyana* in sheath.

Lælia Digbyana is being much used as a parent in the hybridising experiments, and seedlings between it and *Cattleya citrina*, *C. Trianaei Backhouseana*, and other promising combinations, have been carried out. Among other strange crosses is that of *Zygopetalum Mackaii × Cymbidium giganteum*, the development of which will be of great interest.

CYPRIPEDIUM × EMPEROR OF INDIA.

This fine *Cypripedium*, which was exhibited in London recently by Messrs. Sander & Sons, has now passed into the collection of S. Gratrix, Esq., a famous north-country *Cypripedium* amateur. There seems to be some little doubt as to its exact parentage, but that suggested is probably correct, viz., *C. Lawrenceanum magnificum × C. × Harrisianum superbum*. In point of size the flower is one of the largest, and the build of the flower is pleasing, the dorsal sepal being erect and flat. The measurements of the flower are—dorsal sepal, 3 inches across, 3 inches deep; petals 1 inch in width; pouch about 2 inches in length, and 1½ inch in diameter. The flower is intermediate between the parents, and has the deep claret markings found in good varieties of *C. Lawrenceanum*; the petals are heavily spotted with dark brown. The plant has broad, fleshy, brightly tessellated leaves, nearly 1 foot in length; the flower scape is strong, and about 15 inches in height. Mr. Gratrix has secured the entire stock of this plant. P. W.

The Week's Work.

THE ORCHID HOUSES.

By W. P. BOUND, Gardener to J. COLMAN, Esq., Gatton Park, Reigate.

Shading the Plants.—Houses which contain shade-loving species which are at the present time protected from sunshine by slats of deal or bamboo, should have still further protection by means of a special shading preparation applied to the glass. The amount of sunlight admitted by the slat-blinds is too powerful for *Odontoglossums*, *Phalenopsis*, *Aërides*, *Vandas*, most *Cypripediums*, *Phaius*, and young seedling Orchids of all species. Orchids should not be grown "soft," but I like to keep them "hard" by admitting air abundantly, and I do not consider that sunlight is excluded to an injurious extent during the brightest summer months by the use of both methods of shading; and when double shading is not required, as is the case in cloudy weather, the portable blinds need not be lowered.

Lælia Jongheana.—When young roots are visible at the base of the new pseudo-bulbs, repot the plants if necessary, but merely afford new surfacing materials if this be not requisite. The kind of compost to use should consist of fibre of peat three-fifths, chopped up sphagnum-moss one-fifth, good leaf soil one-fifth, the whole being well mixed together before use. So long as the plants are actively growing, water may be applied freely, the quantity being reduced as root activity declines. Let the plants be hung up in an intermediate-house, or the coolest part of the *Cattleya*-house. An important point in the cultivation of this plant is a sweet buoyant state of the air in the house, a large amount of sunlight at all seasons, and a fair amount of direct sunshine during the summer months.

Cattleya superba.—This summer-flowering species is starting into growth, and any repotting that may be needed should be carried out forthwith; the sort of compost being that recommended in my Calendar for May 3 for *Cattleyas*. *C. superba* is more at home in the stove than in the *Cattleya*-house, and a suitable position is to suspend it with the *Dendrobiums*. It should be afforded much light and some amount of sunshine, in order that it may make the rapid and strong growth so necessary to flower it well. Water should be freely applied, and the aerial roots frequently syringed till the flowering season is past.

Cattleya Eldorado and its Varieties should be treated in the same manner as that recommended for *C. superba*, with the exception that water should be carefully applied till the growth gets further advanced.

Peristeria elata.—This noble-looking Orchid now starting to grow should be potted if necessary, making use of a compost consisting of good fibre loam two parts, and good Oak-leaf soil and peat fibre one part each, mixed well together with a fair quantity of soft brick or small crocks. The drainage materials should occupy quite one-third of the depth of the pot, and over these pieces of turfy loam should be placed. The compost should be kept just a little below the rim of the pot, and the base of the leading growth on a level with the compost, and the potting should be carried out rather firmly. Place the plants in the stove Orchid-house, not shading them much, and apply water very carefully till the growth has advanced somewhat; and during active growth apply water copiously till growth is complete, when it must be gradually reduced, and only sufficient afforded whilst resting as will keep the pseudo-bulbs in a plump state.

PLANTS UNDER GLASS.

By J. C. TALLACK, Gardener to E. MILLER MUNDY, Esq., Shipley Hall, Derby.

Roses.—Climbing Roses growing under glass which have flowered early should be pruned without delay, as next year's results depend on the earliness and strength of the growth

made this year. In the case of *Maréchal Niel* and others of free growth, the whole of the shoots which have flowered this year may be pruned quite close to the old wood, as the new-shoots will quickly replace them. Slower growers than these, such as *Fortune's Yellow* (*Beauty of Glazenwood*), must be carefully thinned of superabundant shoots, and have some of the stronger young wood laid-in, very hard pruning not being productive of strong, rambling shoots; and the gardener must be satisfied with a larger number of less vigorous shoots. *Lamarque* is an example of a type of *Rose* which is improved by hard pruning; and that most beautiful of all climbing *Roses*, *Climbing Devonensis*, affords an example of *Rose* which should be moderately pruned. *Roses* differ so greatly in habit that each must be pruned according to its special requirements, habit, &c. Hybrid *Perpetuals* growing in pots which have already flowered should be hardened off gradually, and be put out-of-doors in order to ripen the wood, but no pruning should be performed beyond removing weak shoots in the interior of the crown. Tea *Roses* may be pruned severely into shape, as being precocious growers, they will have enough time to make strong shoots and mature them. The plants may be plunged in coal-ashes in some sheltered spot, but not in the shade.

Cyclamens.—Young plants may be shifted into 5-inch pots, affording good drainage, and a soil consisting of decayed turfy-loam, leaf-mould, and a considerable quantity of sand, and a small quantity of bone-meal. For the present keep the plants in a warm pit lightly shaded from bright sunshine, and freely syringe them daily. A watch must be kept for aphides and thrips, which cause serious damage if not destroyed as soon as detected.

Bouvardias.—The young stock should be grown for a time in a warm-house or pit, which should be closed early in the afternoon, and the plants, walls, &c., well syringed. Repot all plants that require it, and as growth advances nip out the points of the shoots.

General Remarks.—Bedding and other plants will soon be removed from the houses, relieving the crowded state that has existed in many gardens for the past few months. This will permit of the remaining plants being placed at wider distances apart. Advantage should be taken of the opportunity afforded by the removal of many of the occupants to thoroughly cleanse the houses, limewash the walls, and rid the houses of insect pests. Climbers should have the shoots regulated and made secure in a suitable fashion.

FRUITS UNDER GLASS.

By JAMES WHYTECK, Gardener to the DUKE OF BUCCLEUCH, Dalkeith.

Peaches and Nectarines.—The fruits of such varieties as *Amstden June*, *Alexander*, and *Waterloo Peaches*, *Précoc de Croncels* and *Cardinal Nectarines*, started at the beginning of the year, are ripe or ripening, and the forcing-house should be kept dry and airy, and the fruits well exposed to the sun. Trees when cleared entirely of fruit should be heavily syringed, using an insecticide if red-spider be present on the foliage, and syringe them at frequent intervals in order to maintain the foliage in a healthy state for as long a time as possible, and keep the soil moist.

Succession Houses.—The temperature at the stoning period should by night not exceed 60°, air being afforded in quantity by day, and the temperature kept at about 70°. The fruits sometimes drop during this period, but when dropping ceases, thin the fruits so as to have one to each square foot of surface. Remove entirely very gross shoots, reduce the number of the others, make all shoots secure to the trellises, and try to make both sides of a tree of uniform size. Previous instructions should be duly carried out in regard to syringing, affording water, ventilation, &c.

The Latest Peach and Nectarine House.—The fruits may have set thickly, and may need a good deal of thinning, but enough should be left to allow for losses by dropping during

stoning. Disbud early, leaving one shoot near the base of the old shoot, one in the middle, and the leading point. Foreright shoots having fruits at their base should be pinched back to the three basal leaves. No fire-heat will now be required in this house, and so arrange the ventilation as to accord with the time when the crop of fruit should be ripe. Beware in giving air not to admit cold cutting winds. In bright weather syringe the tree in the morning with quassia-water if aphides are observed; and if thrips, use diluted N.L.-All. Apply water to the borders when required, and if the soil is light, or the subsoil gravelly, pay particular attention to them or they may become injuriously dry. Apply artificial manure or manure-water from cowsheds. A heavy soil is best for the Peach, but it is very necessary to examine such soils with a soil-tester, ascertaining their condition as regards moisture, as any excess of water in the soil would be sure to cause injury to the roots. No manure should be afforded to young trees growing in good soil, but only to weak or aged trees carrying much fruit.

THE KITCHEN GARDEN.

By T. TURTON, Gr. to J. K. D. WINGFIELD DIGBY, Esq., Sherborne Castle, Dorset.

Spinach and Turnips.—Seeds may still be sown in the open quarters, and better still on plots where they will eventually receive some amount of shade from rows of *Runner Beans* or *Peas* of tall growth. I always reserve a border on the north side of a high wall for sowings to be made in June or July, sowing the *Spinach* and *Turnips* in alternate rows at 15 inches apart, the *Spinach*, as a rule, being over by the time the *Turnips* require additional space.

Perpetual Spinach (or *Green-leaved Beet*) is invaluable during hot weather when summer *Spinach* runs quickly to seed, and throughout the winter when ordinary *Spinach* is sometimes scanty; and where *Spinach* is often asked for, a moderate quantity of it should certainly be grown. Sow the seeds in drills at 18 inches apart, and when thinned finally the plants should stand at 1 foot apart.

Hints on operations.—Advantage should be taken of the dry state of the ground to ply the Dutch-hoe among the crops as soon as the lines can be distinctly observed; the aëration of the soil encourages growth, and the weeds are killed. Watch the plots of early sorts of *Potatoes*, and draw the soil over the tops as soon as these push through the surface; and cover early *Potatoes* on warm borders to protect them from night frosts, as directed in a former *Calendar*, whenever these seem imminent. Remove flower-stems of *Rhubarb*, which if allowed to develop rob the plants of the energy which ought to be concentrated in the production of stalks. Clear off the stumps of *Broccoli* as soon as the crop is cut; indeed, it is a better practice to pull a plant when the head is taken. The ground may be planted with *Potatoes*, manuring it if this be necessary, and simply digging it.

Runner Beans.—Sow the main crop forthwith, according to the directions given in a recent *Calendar*. Should the plants of the early sowing get crippled by cold, destroy them, and sow more extensively at this date. Those gardeners who sowed *Beans* in pots a month ago, and have the convenience to keep them in an unheated orchard-house or cold pit until genial weather arrives, will be gainers in a season like the present, if meanwhile they bring along the plants as hardily as they may with safety, by removing lights and affording plenty of air in favourable weather.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bilton, East Budleigh, Devonshire.

Thinning Stone Fruits.—If *Peaches* and *Nectarines* are thickly set with fruits, remove all ill-placed ones, that is, those that are likely to be damaged by coming in contact with the branches, wire, or nails, reserving those fruits that are the more prominent and taking the lead, but deferring the final thinning until the

stoning period is finished. As regards the distance between the fruits, much depends upon the variety and the health of the tree; but as a rule of general application, one fruit per square foot suffices for the largest *Peaches*, 3 or 4 inches less for those of middle size, as well as for most varieties of *Nectarines*. Unless the crop is a thin one, one fruit only should be left on a shoot. During the stoning period apply water plentifully at the root, also farmyard or stable drainings at that time, or an approved artificial manure may be sprinkled on the border in moderation, and lightly pointed-in before clear water is applied. To young trees, or those making strong growth, or which have but few or no fruits, clear water only should be afforded. *Apricots*, when finally thinned, may be left at 5 to 7 ins. asunder for dessert fruit, and for preserving purposes a little less. The point of every shoot which is not required should be nipped out at the third or fourth leaf, leaving short, stubby shoots of an inch or two in length to form natural spurs without any more pinching. Examine all curled leaves for the maggot. These trees should be occasionally washed with the garden-engine or water-hose, applying the water gently so as not to lacerate the leaves.

Sweet Cherries.—As these are very liable to attacks of black aphid, which cripple the shoots, a frequent examination should be made, and if any are observed, an insecticide applied two evenings in succession, syringing with clean water early the next morning, will generally effect a clearance of the pests.

Strawberry-beds.—Owing to the light rainfall in this part of the country during the last two months, I have found it necessary to apply water copiously before putting down the straw, flat-hoeing the ground a few days previously in order to kill weeds—a method that keeps the soil moist for a considerable space of time, even should warm, dry weather set in, though at the time of writing the weather is as cold as that experienced in the middle of March. The plants look well, in spite of the unseasonableness of the weather, and promise well for a crop if hard frosts do not occur to spoil our hopes.

THE FLOWER GARDEN.

By R. DAVIDSON, Gardener to EARL CADOGAN, Culford Hall, Bury St. Edmunds.

Sub-tropical Plants.—These in most gardens will be making satisfactory progress, but in order to obtain extra large specimens of *Grevilleas*, *Melanthus major*, *Wigandias*, &c., they should be kept growing in a brisk heat, and all the use possible made of solar heat up to 90° in the afternoon of fine days, and thus counteract any lowering of the temperature that might occur between night and morning. If any of these plants are found to be well rooted in their pots, weak liquid manure-water, *Clay's Fertiliser*, or weak soot-water may be often afforded alternately with rain-water, and they should be copiously syringed with tepid water twice or thrice a day in bright weather.

Dahlias.—The tubers in the root-store will have commenced to grow, and may safely be planted out forthwith in the dry state, putting them deeply and firmly in the soil with the crowns 3 or 4 inches below the ground-level. It is a good practice to plant a number of the different varieties in the kitchen-garden, as is done here, the plants producing abundance of flowers in the rich soil which come in extensively for decorations of all kinds.

General Remarks.—The taller-growing varieties of herbaceous *Pæonies*, *Delphiniums*, *Pyrethrums*, *Darwin* and late-flowering *Tulips*, will require fastening to neatly-trimmed sticks of suitable sizes, with strong strips of raffia, tarred, or soft machine-made string. Sweet *Peas* and the perennial species should be supported early with well dressed and sprayed *Pea-sticks* when standing in lines, and for small circular groups employ the tops of young *Larch* trees. Remove all protecting materials from *Lilies*, and prick up the soil with care so as to give it a fresh and clean appearance.

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 the unused communications or illustrations, unless by special arrangement.

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 | MAY 17 | Whitsuntide Exhibition at Manchester; remains open till May 22. |
| MONDAY | MAY 19 | Whit Monday, Bank Holiday. |
| TUESDAY | MAY 20 | Royal Horticultural Society's Committees Meet. |
| WEDNESDAY | MAY 21 | Royal Botanic Society's Meet. General Exhibition of the Société Nationale d'Hort. de France (six days). |
| SATURDAY | MAY 24 | Linnean Society (Anniversary Meeting). |

SALES FOR THE WEEK.

WEDNESDAY, MAY 21—Orchids, Palms, Bay Trees, and Flowering Plants, at 12.30, at Stevens' Rooms.—Palms, Plants, and Bulbs, at 6 and 6.5, Cheapside, by Protheroe & Morris, at 12.—Sale of Exhibition Plants, &c., at Sidford Lodge, Shirley, near Southampton, by order of the Misses Todd, by Protheroe & Morris, at 1.

THURSDAY, MAY 22—Clearance Sale of Collection of Orchids, Plants, &c., at The Grove, Twickenham Road, Teddington, by Protheroe & Morris, at 12.30.

FRIDAY, MAY 23—Orchids in large variety at 6 and 6.5, 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—55.9°.

ACTUAL TEMPERATURES:—

LONDON.—May 14 (6 P.M.): Max. 53°; Min. 38°.
Rainy, cold.

PROVINCES.—May 14 (6 P.M.): Max. 51°, W. Ireland; Min. 43°, Hebrides.

The Black Currant Gall-mite.
THIS pest plays such serious havoc in market-gardens and in private plantations, that any information concerning effectual means of destroying it will prove acceptable.

Reference to past volumes of the *Gardeners' Chronicle* will show our readers that we have long recognised the importance of this Currant disease, which was, indeed, originally described in these columns by the late Professor WESTWOOD, and we have advocated that stringent measures should always be taken against it. Hitherto no certain preventative or cure has been discovered, though some applications have proved of local and temporary benefit.

It is in such cases as this that agricultural experiment stations should be of service, as they have the requisite staff and materials always at hand. There is every reason to hope that sooner, rather than later, a means of completely exterminating the mite will be discovered. Now that the attention of the agricultural colleges and other public bodies is attracted to the subject, experiments in connection with it will be continued, and the thinkers and workers who have found means of checking the phylloxera, or the Potato fungus, and other serious diseases of plants, are not likely to be baffled for long by a mite, concerning which much information has already been gained by them.

Currant growers therefore will all be interested in the reports sent out by Mr. E. J. LEWIS, on experiments in fumigating with hydrocyanic acid gas as a remedy for the Black Currant gall-mite, *Eriophyes ribis* (Napela), or *Phytoptus ribis* (Westwood). The reports are issued under the auspices of the County Councils of Kent and Surrey, and relate to work done in connection with the South Eastern Agricultural College, Wye. The pamphlet before us deals with the life history and habits of the pest; its spread, its effects, the remedies adopted, and the results of these experiments. The following is the summary, as given by Mr. LEWIS: "In none of the experiments was the disease exterminated. Even in those giving the best results, such as at Pembury and at Wye, there were still a few big buds left. In the majority of cases the attack has been lessened, but unless the infestation is entirely got rid of, the result is of little practical value to the fruit-grower. In the case of the plants fumigated at Pembury, and fifteen bushes fumigated at Wye, it is quite possible that some of the buds still contain mites (although I have not found any in the cuttings taken), but not in sufficient numbers to cause the buds to swell. If this is so, the result will be similar to that experienced with the bushes fumigated when the presence of the mites was not apparent until the latter part of the year following that in which the fumigation took place. There is no indication that any one variety of Currant is less likely to be attacked than another, given equal opportunities of becoming infested. With regard to eggs: these, though much less numerous in January than at any other time in the year, are nevertheless usually present in some of the buds, and upon them the gas apparently has no effect. In order to overcome this difficulty, two or even three fumigations would be necessary. The interval between each would depend upon temperature, but it is difficult to ascertain the proper length of such an interval, so as to allow all the eggs to hatch in the meantime. We do not at present know exactly how long an egg takes to hatch in the winter, or how soon after hatching a mite will start laying eggs on its own account. Two fumigations only might not have the desired effect, if mites hatched shortly after one treatment commenced to lay eggs before the next fumigation took place. This would necessitate a third fumigation. To sum up the results of these experiments, they show that fumigation will in most cases diminish the attack by destroying a great many of the mites, but that apparently it has no effect upon the eggs, and will not entirely get rid of the disease. The results of the Rodmersham experiments further indicate that a stronger treatment may be resorted to without injury to the plants. Nevertheless, it is doubtful whether any alteration in the amounts of the chemicals used, or in the length of time during which the bushes are under treatment, would be able to effect a permanent cure."

The *Journal* of the R.H.S.

A BULKY part is before us (April, 1902), but one which well sustains its character for utility. The *Journal* alone furnishes much more than an equivalent for the guinea subscription to those who are really interested in horticulture, whilst those who are only indirectly concerned in its progress get ample equivalents in other ways. The present number contains an appalling list of fungous parasites living on Caryophyllaceæ (Pinks and their allies), by Dr. COOKE: and useful papers on fruit-growing in Scot-

land. Captain HURST's paper on MENDEL's "law" as applied to Orchid hybrids, is a most valuable contribution to the subject, and it alone would add lustre to any publication. Mr. MASSEE's lectures on plant diseases are most serviceable. It is most satisfactory to know that such lectures are given to the students at Chiswick. Some more of a similar character would greatly add to the advantages of a sojourn in those gardens.

At the time when the Drill Hall was turned into a vast "store" for the exhibition of bottles of preserved fruit, we expressed the opinion that half-a-dozen bottles as a sample would have been ample, especially as no details of the process were given; nor are they vouchsafed in the paper as printed, which is therefore rather of the nature of an advertisement than of an original communication. Be this as it may, we are bound to say that Mr. ARSTIN's process, whatever it may be, is highly successful, for several bottles which since that time have been subjected to trial have proved excellent.

The abstracts are very useful, and as the abstractors gain practice, and use their judgment in selecting what is really good and original, and pass over what has been better said before or what is mere "paste-and-scissors work," the more valuable will the record be. We congratulate the Society and its Editor on the increasing value of the *Journal*.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Floral and Fruit Committees of the Royal Horticultural Society will be held on Tuesday, May 20, in the Drill Hall, Buckingham Gate, Westminster, at 1 to 5 P.M. A special exhibition of Tulips will also be held, under the auspices of the National Tulip Society, at the same time and place. A lecture on the "Origin and Properties of the English Tulip" will be given by Mr. A. D. HALL, F.R.H.S., at 8 o'clock.

— At a general meeting of the Royal Horticultural Society held on Tuesday, May 6, sixty-eight new Fellows were elected, amongst them being the Countess of Bective, Baroness Deichmann, Lord Ludlow, Lady Birkbeck, Lady Glyn, Hon. Mrs. Bevan, Hon. Mrs. McLean, W. H. Upjohn, K.C., and Major C. A. Gordon Clark, making a total of 520 elected since the beginning of the present year.

— THE CRYSTAL PALACE FRUIT SHOW.—The Royal Horticultural Society's ninth annual show of British-grown fruit will be held at the Crystal Palace on September 18, 19, and 20. The prize schedule is now ready, and contains, in addition to the list of prizes, an authoritative list of dessert and culinary Apples, Pears, and Plums. Special prizes are offered for preserved and bottled fruits. Copies can be obtained on application to the Secretary, R. H. S., 117, Victoria Street, London, S.W. Applicants should enclose a penny stamp.

— TEMPLE SHOW.—Intending exhibitors are requested to note that entries for this show, which takes place on May 28 and two following days, close on Tuesday, May 20, and that all entry forms bearing a later post-mark will be liable to refusal. No plants can under any circumstances be entered on the day of the show, but single plants for Certificate may be entered as late as Friday, May 23.

The Sherwood Cup competition: Intending exhibitors for the Sherwood Silver Cup are requested to note that all groups of hardy ornamental trees and shrubs competing for the

Cap will be staged in the open air, and must not occupy more than 500 square feet; but the actual space to be allotted to these groups cannot be decided until the number of competitors is known, as the space at command is limited, and it must be divided equally. Tuesday, May 20, is the last day for entering.

— The Coronation Rose Show, Holland House, June 24 and 25: The attention of exhibitors is called to the following regulations—1. The only entrance and exit for carts and vans is in Melbury Road. 2. Exhibitors will be admitted from noon to 8 P.M. on Monday, June 23, and from 4 A.M. to 9 A.M. on the 24th. 3. Exhibitors are particularly requested to warn their drivers to be careful to keep off the cricket pitch. 4. All classes of plants, flowers, and fruits may be exhibited at this show, but no Roses may be included in any miscellaneous or mixed groups. Roses (except for Certificate) may only be shown under the schedule. 5. Application for space must be made not later than Tuesday, June 17. 6. The Roses will be judged by special Rose judges, whose awards will be final. 7. The judging of other groups will be on the same system as that which obtains at the Temple. 8. The rules and regulations applying to the Temple, and to be found on pages 66, 67, and 68 of the Society's "Arrangements, 1902," and numbered 1 to 16 inclusive, will be in force at the Holland House show. By order of the Council, W. Wilks, Secretary.

DICTIONNAIRE ICONOGRAPHIQUE DES ORCHIDÉES.—In the February issue of his excellent coloured plates and descriptions of Orchids, M. ALFRED COGNIAUX gives—

ANGREUM SCOTTIANUM, Rehb. f.—A terete-leaved species, from the Comoro Isles, with white flowers furnished with long, brownish spurs.

ERANTHUS RAMOSUS, Cogn.—This is *Eranthus ramosa*, Rolfe; but M. Cogniaux adopts *Eranthus* as the generic name finally selected by Lindley in 1821. It has large greenish flowers, with stout, obtuse spur, the whole bearing a striking resemblance to *E. denticatus*, Rehb. f. Native of Madagascar.

CATLEYA × CHAMBERLAINIANA, Rehb. f.—Raised by Messrs. Jas. Veitch & Sons, and flowered by them in 1881. Obtained from *C. Leopoldi* × *C. Dowiana*. Sepals and petals greenish-white, tinged and spotted with rose; front of lip and side lobe tips purplish-crimson.

CATLEYA × WAVRINIANA, Cogn. (*C. Warszewiczii* × *C. granulosa* Schofieldiana).—Sepals and petals yellowish, tinged with rose; front of lip purple.

LÆLIA LINDLEYANA VAR. PURPUREA, Cogn.—This is a highly coloured form of the old natural hybrid generally supposed to be between *Cattleya intermedia* and a *Brassavola*, and which has proved a botanical puzzle to several authorities. Mr. Rolfe named it *Brasso-Cattleya*, which seems to be the most reasonable name. Reichenbach originally called it *Cattleya Lindleyana*, though the pollinia would have shown a nearer approach to the *Lælia* which M. Cogniaux adopts, although he finds that four of the eight pollen masses are imperfect, as in *Lælia-Cattleya*. Sepals and petals greenish, with red spots; lip rose-purple with white base.

ODONTOGLOSSUM GRANDE PITTIANUM.—Flowers yellow, in two tints, the darker occupying the place of the brown colour in the normal form.

PLATYCLINIS FILIFORMIS, Benth.—Flowers small, and arranged in two rows on drooping racemes. *Dendrochilum filiforme*, Lindl.

PLATYCLINIS GLUMACEA, Benth.—Flowers in dense racemes, white tinged with rose.

PROMENEA STAPELIOIDES, Ldl.—Sepals and petals greenish, spotted with purple; lip purple. *Promœna* has been incorporated in the rather unwieldy genus *Zygopetalum*, but M. Cogniaux prefers to maintain its generic rank.

PROMENEA XANTHINA, Ldl.—Flowers yellow, with red markings on the column and side lobes of the lip. Also called *Zygopetalum citrinum*.

SOBRALIA VIRGINALIS VAR. LILACINA, Cogn.—Flowers white, with yellow disc and pink front to the lip. Colombia.

STANHOPEA REICHENBACHIANA, Roehl.—Flowers large, white, with rose spots on the petals and lip.

S. Lowii, illustrated in the *Gardeners' Chronicle*, 1893, p. 689, seems to be this species, and *S. Amesiana* a white form of it. Colombia.

TRICHOPILLIA CRISPA MARGINATA, Warner.—M. Cogniaux makes *T. marginata*, Henfrey, a synonym of *T. crispa*, and *Index Kewensis* also refers *T. coccinea* to *T. marginata*, and the long, slender pseudo-bulbs of the plants known under the last two names in gardens, and their general resemblance, seem to favour that reference; but it is certain that although the flowers of both have some resemblance, there is no resemblance between the plants known in gardens as *Trichopillia crispa* and *T. crispa marginata*, sometimes also appearing as *T. lepidia*, and which have comparatively short pseudo-bulbs, of much the same texture as those of *T. suavis*, and the long, slender, glossy green pseudo-bulbs and leaves of *T. marginata*, Henfrey; indeed, the *T. crispa* and varieties of gardens seem to be well intermediate between *T. suavis* and *T. marginata* (*coccinea*). The flowers of the plant illustrated are dark rose coloured, with irregular white margins to the sepals and petals.

The "Chronique Orchidéenne," which accompanies the plates, has a note on *Cattleya quadricolor* (*chocoensis*), some particulars of Messrs. DUCAL's culture of Orchids in leaf-soil, and an enumeration of some hybrid Orchids.

TULIPS.—We lately received from Mr. HARTLAND, of Cork, a fine selection of Tulips, which show to what perfection of colouring these gay flowers can be grown in South-west Ireland. The species and varieties of Tulips were monographed in our columns by Mr. BAKER in 1883; and Count SOLMS V. LAUBACH published a most important paper, "Weizen und Tulpe," in 1899. The botanical distinctions depend in the first place on the presence or absence of hairs on the inner surface of the bulb-scales, and when present, on the nature and distribution of those hairs. Wild specimens brought into cultivation vary so excessively after only a year or two's cultivation, that it is almost impossible to draw up characters that suffice to distinguish them one from another. It is supposed that the late Tulips are derivatives from *T. Gesneriana*, whilst the Van Thol Tulips come from *T. suaveolens*; but we have no means of knowing what the Tulips were when originally introduced. We do know that the subsequent developments have been beyond power of accurate classification. Among those sent by Mr. HARTLAND are *T. Billietiana*, a Savoyard species, with yellow flowers flushed with pink, *Bot. Mag.* 7253; *Didieri* var. *alba*, with medium-sized flowers of a pale sulphur-yellow colour. In both these species the outer segments are acute, while the inner ones are rounded. *Vitellina*, with primrose-yellow flowers streaked with green; *maculata striata*, with elongate flowers, crimson-flushed and streaked with yellow; *fulgens*, flowers elongate, segments pointed canary-yellow. In addition we may note *Shandon Bells*, rose-pink flushed with white; *Sunset*, yellow flushed with red; *York and Lancaster*, creamy white margined with rose; *Bronze Queen*, lilac-rose; *Othello*, crimson, with darker centre; *John Ruskin*, rosy, edged with yellow; *Gold Flake*, yellow, heavily striped with red; *Aurantiaca maculata*, orange-scarlet; *Picotee*, cream coloured, flushed with crimson; *Leghorn Bonnet*, yellow, flaked with red; and others, as the catalogues say, too numerous to mention.

THE ROTHAMSTED EXPERIMENTS.—The Lawes Agricultural Trust Committee at a recent meeting appointed Mr. A. D. HALL, M.A., principal of the Agricultural College, Wyke, to succeed the late Sir HENRY GILBERT, F.R.S., as Director of the Rothamsted Experimental Station. Principal HALL, who received his training at Oxford, and has since distinguished himself by his successful development of Wyke College as a centre of agricultural education, will thus carry on the historic experiments

that were jointly conducted by Sir J. B. LAWES and Sir HENRY GILBERT for over half a century at Rothamsted, and it is anticipated that not only will the continuity of the work of the past be maintained, but that the progress of science will be advanced in new directions at this national centre of agricultural research. *Times*.

LINNEAN SOCIETY.—The next meeting of this Society will be the anniversary meeting, which will be held on Saturday, May 24, at 3 o'clock precisely.

"THE BOTANICAL MAGAZINE."—The May number contains coloured drawings and descriptions of the following plants:—

Kniphofia multiflora, Wood, tab. 7832.—The flowers are greenish-yellow and erect, a peculiarity which it shares with *K. pallidiflora* only. It is a native of Natal, whence it was introduced to Kew by M. MAX LEICHTLIN.

Berberis dictyophylla, Franchet, tab. 7833.—A native of Yunnan, with strongly netted oblong leaves; flowers shortly-stalked, yellow, globose in pairs; berries, oblong, red.

Aloe oligospila, Baker, tab. 7834.—A new species raised from Abyssinian seed by Mr. LYNCH, of the Cambridge Botanic Garden. The leaves are spiny, white-spotted, and the flowers pendulous, pink at the base, yellowish at the tips.

Eucalyptus cordata, Labillardière, tab. 7835.—A native of Tasmania. It is one of the hardiest species, and we have recently received flowering specimens of it from the Isle of Arran in the Clyde; see *Gardeners' Chronicle*, April 12, p. 247.

Honckenya ficifolia, Willdenow, tab. 7836.—A West African shrub with palmately lobed leaves and large flowers, with violet-coloured petals and very numerous yellow stamens.

"FIELD AND WOODLAND FLOWERS."—A recent publication by Professor GASTON BONNIER, is entitled *Les Plantes des Champs et des Bois*, and with our knowledge of the work of this author we are confident that his new book is as reliable as it is pleasant reading. The plants are mentioned in the sequence in which they usually bloom or fruit, or are otherwise most conspicuous: those of the spring, the summer, the autumn, and the winter, being dealt with in turn. Familiar names are given, but the scientific ones also; in fact the book is a botanical treatise written pleasantly, not formally. There are nearly nine hundred small illustrations, and thirty plates, eight of which are coloured. *Les Plantes des Champs et des Bois*, is published in Paris, Librairie J. B. BALLIERE ET FILS.

UNIVERSITY OF ST. ANDREWS.—The institution of a Lectureship in Agriculture and Rural Economy in St. Andrews University has opened the way there for systematic research into problems affecting the practical interests of the farmer. Although a great number of experiments have been carried out, and observations published, on farm crops, there is occasion for more detailed investigation and a fuller statement of results regarding the diseases and cultural peculiarities of many of them, notably the Potato. With this view, a series of enquiries have been made concerning the disease of the Potato known as "sprain." The peculiarity of this ailment is the development of internal tissue of a kind which refuses to become soft when cooked. The areas and spots affected are varied in extent, and irregularly distributed. Streaks and patches of discoloured flesh indicative of the "sprain" are visible when the fresh tubers are cut up.

The exterior of the diseased tubers presents a normal appearance, and consequently there is no means of distinguishing them outwardly from such of the crop as may be unaffected. The disease is generally believed to be most apt to appear in a certain class of light soils. It is not to be confounded with the blight too well known as the Potato Disease, which is due to the attack of an easily recognisable parasitic fungus. The lecturer on Agriculture in the University is Dr. J. H. WILSON.

FROST IN BERLIN.—On the night of April 27-28, the thermometer sunk in the neighbourhood of Berlin to 2° C. (—5° Fahr.), and as a consequence the flowers and young shoots of Magnolias were completely destroyed in SPÄTH'S nursery. In other places the night frosts have caused great injury to plants, and the flowers of Narcissus, Hyacinths, Spiræas, Dielytras, Pæonies, and young shoots of Eucalyptus, Prunus, Gymnocladus, were frozen, and blossoms of fruit-trees have suffered.

COMMITTEE ON FORESTRY.—The departmental committee appointed by the President of the Board of Agriculture to inquire into and report as to the present position and future prospects of forestry in Great Britain, and to consider whether any measures might be taken, either by the provision of further educational facilities or otherwise, for its promotion and encouragement, has held further sittings at St. Stephen's House, Westminster, this week. Mr. R. C. MUNRO-FERGUSON, M.P., was in the Chair, and the other members of the committee were also present—viz., Sir John Rolleston, M.P., Mr. E. Stafford Howard, C.B., Dr. W. Schlich, C.I.E., F.R.S., Lieutenant-Colonel F. Bailey, Professor J. R. Campbell, Mr. J. Herbert Lewis, M.P., Mr. George Marshall, and Dr. W. Somerville. The following witnesses gave evidence:—Lieutenant-Colonel F. Bailey, Lecturer in Forestry at Edinburgh University; Mr. J. T. Maxwell, of the Local Government Board for Scotland; Mr. P. G. Craigie, Assistant Secretary to the Board of Agriculture; Dr. W. Somerville, Assistant Secretary to the Board of Agriculture; Mr. C. O. Minchin, of the Board of Inland Revenue; and Mr. A. D. Webster, representing the Royal Horticultural Society; Mr. James Michie, representing the Highland and Agricultural Society of Scotland; Dr. H. Marshall Ward, F.R.S., Professor of Botany in the University of Cambridge; Mr. Joseph Parry, M.I.C.E., water engineer to the Liverpool Corporation; and Mr. M. F. Roberts, assistant engineer to the General Post Office. *Times*, May 10.

"AGRICULTURAL NEWS."—We have before us the first number of a fortnightly periodical, published at one penny at Barbados. It is one of the many evidences of the activity of Dr. MORRIS in all that concerns the development of the agricultural resources of the West Indies, and lays no claim to public recognition beyond an earnest desire on the part of the Imperial Department of Agriculture to instruct and assist all classes of the community, and to promote the agricultural interests of these colonies. The contents, though naturally devoted almost exclusively to colonial affairs, are varied and interesting.

STOCK-TAKING: APRIL.—The Trade and Navigation Returns for the past month show a small decrease in the value of imports as compared with the same period of last year, but the exports show an increase of over 1½ millions. The imports are valued at £46,199,928 for last month; for April, 1901, £46,265,617—decrease, £65,689. The Easter holidays interfered with trade, and the efforts to make ends meet at

the Exchequer had a confusing effect. The tax on sugar continues to be a disturbing element; what the corn tax may prove to be cannot at present be estimated. Whilst wheat has increased in volume and value, flour has fallen—possibly with a view to gaining the help of the miller in lightening the wheat impost. Breeders and users of all kinds of stock, from the horse to the pig, are interested in this corn tax, and are busily bewailing their plight. The following brief extracts from the "summary" table are of interest:—

| IMPORTS. | 1901. | 1902. | Difference. |
|--|------------|------------|-------------|
| | £ | £ | £ |
| Total value ... | 46,265,617 | 46,199,928 | —65,689 |
| (A.) Articles of food and drink—duty free ... | 14,087,297 | 13,895,681 | —191,616 |
| (B.) Articles of food & drink—dutiable | 5,149,761 | 3,079,102 | —2,070,659 |
| Raw materials for textile manufactures ... | 8,202,376 | 7,868,941 | —333,435 |
| Raw materials for sundry industries and manufactures | 4,313,054 | 4,523,721 | +210,667 |
| (A.) Miscellaneous articles ... | 1,214,142 | 1,976,805 | +762,663 |
| (B.) Parcel Post ... | 89,097 | 79,631 | —9,466 |

By the way, it is worth noting that "motors" are being largely imported, and in the use of these the farmer and market gardener may find a way to reduce his food bill and some other expenses. The value of imported timber of all classes has gone down by £17,521, as compared with the figures for the same period last year; and it is interesting to note that contracts for some naval necessities now find their way from the Admiralty to the United States, it being insisted that American Ash is that best suited for the purpose. The always-interesting table connected with fruit, roots, and vegetables indicates the oncoming of the small-fruit season; also the great drop in the import of Potatoes. In connection with this, the various market prices are of interest. The following is our usual table:—

| IMPORTS. | 1901. | 1902. | Difference. |
|--|-----------|---------|-------------|
| | Cwt. | Cwt. | Cwt. |
| Fruits, raw:— | | | |
| Apples ... | 103,461 | 124,243 | +20,882 |
| Apricots and Peaches | 17 | 18 | +1 |
| Bananas... bunches | 180,587 | 216,208 | +35,621 |
| Cherries ... | | 25 | +25 |
| Gooseberries ... | | 1 | +1 |
| Grapes ... | 1,129 | 1,547 | +418 |
| Lemons ... | 99,991 | 101,968 | +1,977 |
| Nuts—Almonds ... | 4,217 | 8,340 | +4,123 |
| Others, used as food | 49,588 | 53,783 | +4,195 |
| Oranges... .. | 574,398 | 806,087 | +231,689 |
| Pears ... | 1,293 | 812 | —481 |
| Plums ... | 7 | 22 | +15 |
| Strawberries ... | 17 | 13 | —4 |
| Unenumerated, raw... | 4,802 | 4,971 | +169 |
| Fruits, dried— | | | |
| Currants, for home consumption ... | 45,372 | 63,423 | +18,051 |
| Raisins " ... | 16,802 | 19,489 | +2,687 |
| Vegetables, raw:— | | | |
| Onionsbush. | 791,900 | 733,131 | —58,769 |
| Potatoes ... cwt. | 1,144,550 | 233,816 | —910,734 |
| Tomatoes... .. | 53,007 | 56,577 | +350 |
| Vegetables, raw, unenumerated ...value | £51,741 | £80,506 | +£28,765 |

For the first four months of the year the imports amount to £178,811,736, as against £178,373,053 for the same period of last year—showing an increase of £468,683—a small mercy, perhaps, but still it is one. Turning now to—

EXPORTS.

We find an increase of £1,505,496 over the total for April, 1901, the figures being £21,987,033 for April in last year, against £23,492,529 for last month. Very noticeable in the "increase" section are the items connected with textiles and metals; in the former, the East, America, and Europe are the principal customers, and linen has been largely taken by the United States buyers. The figures for the four months just ended are £91,291,217, against £92,799,312 for the same period in 1901, a decrease of £1,508,095.

FLOWERS IN SEASON.—We have received a quantity of blooms of the hybrid Irises, raised by Mr. W. J. CAPARNE, Guernsey, similar to those mentioned in our report of the last meeting of the R.H.S. Mr. CAPARNE states that several species share in the parentage of the new "intermediate" race recommended as valuable for supplying flowers of the Germanica type, in April and May, thus bridging over the period between the I. pmula varieties and varieties of the common Germanica species. We have received a handful of Lily of the Valley flowers and foliage from the head gardener at St. Mary's Isle, Kirkeudbrightshire, a part of the country more than 300 miles north of London, but which in point of mildness almost equals the south-western counties of England. The flowers are fairly well developed, although cold northerly winds prevail, and 4° of frost have been quite recently experienced in some places, and 2° in others not far from St. Mary's Isle. In 1901 Lily of the Valley was eight days earlier than this year.

AN APPENDIX TO ROYAL CALEDONIAN SOCIETY'S REPORT.—There was inadvertently omitted by our reporter any mention of the six pots of Strawberries and three dishes of very fine fruits, shown by Mr. MCINTYRE, gr., at The Glen, Innerleithen, which took the 1st prizes in both instances. The following special awards were made too late to be included in the report, viz., Gold Medals to Messrs. DICKSON & Co., group of plants; R. B. LAIRD & SON, Ltd., for group of plants; and HOGG & ROBERTSON, Dublin, for Tulips. Silver-gilt Medals to Messrs. CUNNINGHAM, FRASER & Co., for rockery with alpine, &c.; and to Mr. DOWNIE, for group of plants. Silver Medals to Messrs. J. DICKSON & SONS; STORRIE & STORRIE, Dundee; A. & J. GLASS, Newington, Daffodils; and Mr. JOHN FORBES, Hawick. B.

CORONATION WEATHER PROSPECTS.—From the records of the rainfall at Chiswick from 1826 to 1869 inclusive, we find that in thirty of the forty-four years, no rain fell on May 28. On June 21, thirty out of the forty-four days were without rain, and on June 26 out of the forty-four days twenty-five were rainless. On July 1, no rain fell on twenty-five out of the forty-four years. Now May 28 is the day fixed for the Temple Show; June 21 is allotted to the Holland House Show; June 26 is to be the Coronation Day; and the Temple Rose Show will be held on July 1. The following estimates are taken from Mr. ED. MAWLEY'S article in the last number of *The Rosarian's Year-Book*, and are from his own records during twenty-three years. "For the benefit of those who are not accustomed to rainfall measurements, I may state that No. 1, or half an inch, is equivalent to a watering on each square yard of surface in the show ground of about 2½ gallons; No. 2 to 1½ gallon on each square yard; No. 3 to about half a gallon; No. 4 to rather less than half a gallon; No. 5 to about a quarter of a gallon; and No. 6 to about a quarter of a pint. The probabilities of any

day in June or July proving wet to the extent mentioned are, I find, as follows: No. 1, if the minimum amount be reckoned as half an inch, the chances against rain falling during the day-time to that amount are about 80 to 1. No. 2, if the minimum amount be reckoned as a quarter of an inch, the chances against rain falling during the day-time to that amount are about 25 to 1. No. 3, if the minimum amount be reckoned as one-tenth of an inch, the chances are increased to 8 to 1. No. 4, if the minimum amount be reckoned as eight hundredths of an inch, the chances are rather more, viz., 7 to 1. No. 5, if the minimum amount be reckoned as five-hundredths of an inch, the chances are 5 to 1. No. 6, if the minimum amount be reckoned as one-hundredth of an inch, the chances rise to 2 to 1. It should be stated that, if anything, the chances of rain are greater in July than in June. No. 1 may be regarded as representing an exceptionally wet day in summer; No. 2 as a decidedly wet day; No. 3 as a few heavy showers or continued light rain for several hours; No. 4 as not very different to No. 3; No. 5 as a few passing showers; and No. 6 as not sufficient to lay the dust."

TASMANIAN FRUIT.—The Orient Company's steamship *Oroya* is expected here about June 9 with 16,000 boxes of fruit; the P. & O. Company's steamer *Rome* is due about a week later with 10,000 boxes.

THE KEW GUILD.—The annual general meeting will be held on the 27th inst. in the Phoenix Saloon, Holborn Restaurant, at 6.30 P.M. The annual dinner of the Guild will take place on the same evening in the Royal Venetian Chamber, Holborn Restaurant, at 7 o'clock, J. G. BAKER, Esq., F.R.S., in the chair. Tickets, price 5s., may be had from the Secretary, Mr. W. WATSON, Royal Gardens, Kew, if applied for not later than the 21st inst.

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY.—On the occasion of the meeting held on March 5, 1902, the Floral Committee awarded a First-class Certificate to Messrs. OLDER BROTHERS, of Leyden, for *Richardia africana* var. *Childsiana*; and on the occasion of the meeting held on April 2, 1902, the Floral Committee awarded a First-class Certificate to Mr. C. W. R. SCHOLTEN, Jr., Amsterdam (gr., Mr. DROST), for *Cyrtopodium punctatum*. Certificates of Merit were granted to Mr. H. C. HACKE, Baarn (gr., Mr. H. HENDRIKSEN), for *Cypripedium Stanislau Cardon*; and to Messrs. J. C. TRETS & SONS, Boskoop, for *Rhododendron Lady Clermont* × *Caractacus*.

YORKSHIRE NATURALISTS' UNION.—The 164th meeting will be held at Coxwold, for the investigation of Roulston Sear, Oldstead Bank, and the adjacent southern escarpment of the Hambleton Hills, on Whit-Monday, May 19. Railway arrangements: Through return tickets at pleasure party rates will be issued at all stations on the G.C., G.N., H. & B., L. & Y., L. & N.W., Midland, and N.E. Railways, which have booking arrangements for Coxwold, to Members and Associates showing their signed card of membership at North-Eastern stations, or (at other companies' stations) surrendering the Certificate noted below. Tickets taken on May 17 or 19 will be available for return any day up to Tuesday May 20. Where through bookings are not in operation, members may book to the most convenient junction, and re-book to destination; the reduced fares being available for each stage of the journey. The N.E.Ry. Co. issue week-end tickets at single fare from certain stations to Coxwold. Botany will be officially represented by Mr. T. W. WOODHEAD, F.L.S., one of its Secretaries.

The Entomology section will be officially represented by its President Mr. M. L. THOMPSON, F.E.S. Information as to lodging accommodation, programme of meetings, &c., can be obtained on application to the Hon. Secs., Mr. W. D. ROEBUCK, 259, Hyde Park Road, Leeds, and Mr. E. HAWKSWORTH, Goodman Street, Hunslet, Leeds.

"THE COUNTRY GENTLEMEN'S ESTATE BOOK."—This, better known perhaps by its short title of *The Estate Book*, appears this year as a "Coronation edition," edited and compiled by Mr. WM. BROOMHALL. It contains original articles on many phases of estate management, and useful notes for landowners and farmers of all types. Among the contents we note that such subjects are dealt with as: Parochial Assessment of Woodlands, National Food Supplies, Country Estate Accounts, Entrance Lodges, &c. (illustrated), Lightning Conductors, Charcoal Burning, Notes on Building, Forest Entomology (green-fly), Transplanting large Trees, Forestry, Sport, Agricultural Geology, Stock, Dairy, Poultry, and Arboricultural Societies. All these and many kindred subjects that we have no space even to name. *The Estate Book* is invaluable to those to whom it is specially addressed, and is published from the Country Gentlemen's Association, 16, Cockspur Street, Pall Mall, S.W.

"THE BOOK OF THE ROSE," by Rev. A. FOSTER MELLIER (London: MACMILLAN & Co., Ltd.).—This is the second edition of a most valuable book, that on its first appearance proved a great success, and has been accepted as a classic. We note that the present edition has been thoroughly revised by the light of seven years' additional experience. The chapters deal with such matters as History and Classification, Situation and soil, Planting and Protection, Manures, Pruning, Stocks, Propagation, Pests, Roses under Glass, Exhibiting, Manners and Customs, Selections, and a Calendar of Operations. The *Book of the Rose* is prettily illustrated, and no rosarian can afford to be without it.

"PICTORIAL GREENHOUSE MANAGEMENT."—This is a "practical manual, giving directions for the general management of greenhouses, conservatories, and other glass structures, and describing the culture and principal varieties of all the most important greenhouse and stove plants." There are nearly 100 illustrations in the book; some are the size of the page, others are rather rough, but plain and useful sketches illustrative of details of cultural work. The manual is issued by CASSELL & Co., London, Paris, New York, and Melbourne.

SALE OF OLD GARDENING BOOKS.—Messrs. SOTHEY, WILKINSON, & LODGE held a sale at their rooms in Wellington Street, Strand, on May 12, 13, and 14, of the library of Mr. J. W. FORD, of Winchmore Hill. The following works were included in the auction: "Pomona Britannica," by G. BROOKSHAW, 93 coloured plates, 1812, £2 15s.; "Catalogue of Trees, Shrubs, Plants, and Flowers, both Exotic and Domestic, which are Propagated for Sale in the Gardens near London by a Society of Gardeners," printed in 1730, £1 10s.; "Monograph of the Genus *Lilium*," by H. J. ELVES, with 48 coloured plates, by W. H. FITCH, 1880, £6; "Architecture des Jardins," sixty-eight plates, Paris, no date, £5 5s.; "Dessins pour Parterres, Bouquets, Orangeries, and other Designs for Laying-out Gardens, Flower-beds, &c.," sixty-eight plates, folio, 17—, £4 4s.; "A Treatise of Fruit

Trees," by THOMAS HITT, 1757, 11s.; "Theory and Practice of Gardening," by JOHN JAMES, of Greenwich, 1712, £2 6s.; "The Complete Gardener," by M. DE LA QUINTINEY, abridged by G. LOUDON and H. WISE, with an address by J. EVELYN, 1719, 4s.; "Flora, Ceres, and Pomona: or a Complete Florilege, Furnished with all Requisites belonging to a Florist," by JOHN REA, folio, 1665, 12s.; "Sylva Britannica," by J. G. STRUTT, 1822, £1; "The Gardeners' and Planters' Calendar," by R. WESTON, 1782, 2s.

HIPPEASTRUMS AT LIVERPOOL.

[SEE SUPPLEMENTARY ILLUSTRATION.]

THE cultivation of these beautiful plants was commenced at Sefton Park three years ago for the purpose of giving to the public a display of flowers in the large Palm-house during the spring months. A start was made in April, 1899, with some unflowered seedlings, many of which, when they flowered, were discarded as seed-producing plants, being of inferior type. Only the best were selected, and various crosses effected between them. The seed was sown the following June (that is, as soon as it was ripe) in boxes containing a compost of one part loam, one part peat, 2 parts leaf-mould, with a liberal addition of coarse silver-sand. The boxes were plunged in slight bottom-heat, covered with sheets of glass, and kept slightly shaded. The seeds soon germinated, and produced a most uniform crop of healthy plants, which were gradually accustomed to the full rays of the sun. When large enough to handle comfortably, they were potted into "thumbs," using a compost of two parts Kentish loam, one part peat, one part leaf-mould, with enough sand to make the whole porous. They were then plunged in a bed of fine coal-ashes, with slight bottom-heat, in a span-roof house, and not far from the glass. The minimum temperature of the house was 68° F., rising with sun-heat sometimes as high as 95° F.; but although air was admitted freely during the day, the atmosphere of the house was never allowed to become dry, the floors and walls being kept constantly moist, the plants also receiving a good syringing morning and evening. Absolutely no shading was given the plants from the first potting.

By October the seedlings, some 2000 in number, had made splendid progress, and were shifted into 3-inch pots, and again subjected to the same treatment as above. Of course, less air was given as the days became colder, but ventilation was given upon every favourable occasion.

In these pots the plants continued growing all the winter, and by February they had formed bulbs, some of which were 1 inch in diameter. They were now potted into 5-inch pots, adding this time to the compost a 6-inch potful of Clay's Fertiliser to the barrowload of soil.

The house was kept close for a week or two after potting, but when the roots had seized upon the new material, air was admitted freely on sunny days, and throughout the summer; although they received no shade, and an abundance of air, the atmosphere was kept constantly moist. The result of this was that they produced tough, leathery leaves, and firm bulbs.

In June, the whole beds were top-dressed with a good rough compost of equal parts of Kentish loam and leaf-mould, adding a 7-inch potful of Clay's Fertiliser to the barrowful of soil. Into this the roots ran freely, forming by September a complete mat over the beds. At this time air was given night and day, syringing and watering were gradually with-

held, and by the beginning of November the plants had come to rest. They were now removed, and stored on a dry stage in a cool house, where they remained till the following February, when the whole of the soil was shaken from the roots, the bulbs washed, and potted into the same sized pots again. No water was given at the roots until root-action had begun; the plunging material being kept well damped, and the house close and moist. Many of the bulbs were now 6 inches in circumference, and we had the gratification of seeing over eighty of them flower at this time when the bulbs were only twenty-two months old from the time of sowing the seed; the flowers were large and well formed. All these bulbs have again flowered this spring, the most notable being one which produced two spikes last spring, and three this.

The same treatment was given as in the previous year, with the result that the bulbs are now of exceptional size, hundreds of them being 11 and 12 and some 13 inches in circumference, and every one producing flower; they are now brought on in batches of 300 at a time. The first group was staged in the Palm-house on January 17, and they will be continued until the end of May, thus giving an uninterrupted show of nearly five months. The photograph from which the illustration was prepared was taken by E. Edwards, Menzies Street, Liverpool. W. H. W.

HORSE-CHESTNUT ROOTS.

FOR the accompanying illustration (fig. 110), which tells its own tale, we are indebted to Mr. W. G. Holman, who also communicates the following measurements of the denuded roots. The tree is growing in Petersham Park, near Richmond. What can have caused this extensive denudation of the roots is not easy to guess:—

Width of arch on ground, Richmond Park side, 7 feet 4 inches.

Ditto on Petersham side, 10 feet.

Greatest height, 4 feet 6 inches.

Length of arch, 10 feet.

Circumference of biggest roots forming arch No. 1, nearest Richmond Park, 2 feet 2 inches; No. 2, centre, 2 feet 3 inches; No. 3, nearest Petersham, 2 feet 2 inches.

Circumference of trunk of tree at 5 feet from ground, 7 feet 6 inches. Jan. 12, 1902.

HOME CORRESPONDENCE.

DEFORMED FLOWER OF DENDROBIUM WARDIANUM.—I think the enclosed flower (of which I enclose sketches) may interest you. It appeared on an old growth of a newly-imported plant of the present year. I first noticed a peculiarity when it was on the point of bursting through the flower-sheath. It appeared to be unable to make up its mind as to whether it should become a flower or a growth for some time; eventually, as will be noticed, it did both. I have on previous occasions noticed very strange freaks in newly-imported plants. I think, however, this is a record one. *Thos. Arnold, Cirencester House.* [The above description conveys an accurate idea of what has taken place. There is an old pseudo-bulb with a few roots, a new pseudo-bulb from which latter proceeds a flower-stalk bearing one large coloured segment infolded at the margins, and resembling one of the sepals on a large scale. No other part of the flower was formed. Ed.]

SHREWSBURY GRAPE PRIZES.—I think that every dish of fruit, and especially every collection of Grapes, or a single bunch, should be judged by the point system, and a list of the points awarded appended to them after

judging. This would be interesting to many, and it would prevent much adverse criticism, which too often follows the judging of Grapes. "D. B.," is perhaps not aware of the fact that the leading horticultural societies in Scotland will not introduce a code on the point system of judging, and they still practice the old system, and simply place the prize cards on the exhibits. This is what I term the "Please-the-eye-system" of judging. Mr. Goodacre informs us that the Royal Horticultural Society's code is to be employed for the point judging at Shrewsbury, but I do not consider this code to be perfect. I submit to "D. B.," and your many readers the following simple and correct system. The first point that should be considered is that of colour. (1), colour of bunch, possible points 2; (2), finish and bloom, possible points 2; (3), first-class quality (Muscats), possible points 2½; (4), size and symmetry of bunch, possible

the postal address of the "Old Woodman" would be sufficient for my purpose. A. C. Forbes.

DISQUALIFIED FOR NOT NAMING.—At the Spring Show of the Royal Caledonian Horticultural Society in Edinburgh, on 7th inst., the judges disqualified six or seven lots of cut spring flowers because they were not named. I was extremely glad, in a way, that they did so because exhibitions only serve half the purpose they should serve when flowers, &c., are not named. Mr. McHattie might do worse than take a hint, his magnificent display of Tulips in Princes Street Gardens, of which the Edinburgh press and the Edinburgh people are so proud, would be both more interesting, more educative, and more likely to foster a taste for growing such things if each bed had a neat little label in front with the name of the variety in plain lettering. W. Cuthbertson.



FIG. 110.—DENUDED ROOTS OF HORSE-CHESTNUT IN PETERSHAM PARK.

points 1½; (5), perfectly thinned bunch with large sized berries, possible points 1½; perfect bunch, 9½ points. In all cases I would give second quality 2 points, third quality 1 point. A. Kirk, Norwood Gardens, Alloa, N.B.

ASH AND LARCH ON THE CHALK.—Mr. Simpson's reply to my query on the above subject confirms the impression I had when making it, viz., that the large timber he referred to was either off the chalk altogether, or was simply on the chalk formation, and not on "high lying chalk down." My reason for clearing up this point was simply to ascertain if there were any noteworthy exceptions to what I have always found to be the rule; that is, that the growth of these species on pure chalk down is very slow after the first few years. Where gravel, loam, or marl overlies the chalk, growth may often be fairly good and well sustained, and it is very easy for anyone with a limited experience of the Wiltshire Downs to assume that these examples are growing upon typical chalk down. This was doubtless what misled Mr. Simpson when in their neighbourhood. I quite appreciate his reason for not giving names of estates or plantations, but these I do not want. My request was for a little more exact definition of locality, than "not far from Tisbury," in order that I might convince myself that I was wrong, or that Mr. Simpson was right. Even

LIVERPOOL IMPROVEMENTS.—The Liverpool Parks and Gardens Committee are to be congratulated on their efforts to beautify their city. Numerous churchyards have been taken over, the latest being St. James', Park Lane. Handsome new walls have been erected, and the grounds, which are agreeably undulating, have been laid out in flower-beds and borders, and a fine expanse of turf afforded. St. John's is to follow, the design being most elaborate. It will include a magnificent terrace-garden adorned with statues of distinguished citizens. When completed, the view from the old Haymarket, with the classical St. George's Hall in the background, will be one of the finest in the kingdom. It is intended to lay out a spacious garden in front of the new Dock Board Offices. X.

THE FLORA OF SOUTHERN BERKS.—Southern Berks, with its picturesque scenery, affords a good hunting ground for the student of botany. There he may find treasures of almost every variety of colour and form, from the humble Celandine and Daisy to the green Hellebore (*Helleborus viridis*) and the rare-spiked Speedwell (*Veronica spicata*). In the shady woods, where—

"Full many a flower is born to blush unseen,
And waste its sweetness on the desert air,"
may be found the sweetly pretty Lent Lily

(*Narcissus pseudo-Narcissus*), the snow-white Lily of the Valley (*Convallaria majalis*), the Solomon's Seal (*Polygonatum multiflorum*), the stately Foxglove (*Digitalis purpurea*), the two Daphnes (*Daphne Laureola* and *D. Mezereum*), and many others of equal beauty and fragrance too numerous for present description. In the meadows and fields are found the Primrose Peerless (*Narcissus biflorus*), *Fritillaria Meleagris*, Meadow Cranesbill (*Geranium pratense*), and some fifteen species of *Orchis*, including the fragrant Butterfly Orchis (*Habenaria bifolia*), the green Twayblade (*Listera ovata*), the Lady's Tresses (*Spiranthes autumnalis*), with its curiously twisted flower-spike; and broad *Epipactis* (*Epipactis latifolia*). The Umbelliferae, too, are largely represented, while Labiates and Scrophularias abound. By the roadsides are found the tall Campanulas, and Thistles and other Composites in abundance. Among the Campanulas which grow here may be mentioned the rare *C. rapunculoides* (Creeping Campanula), and of the Composites the woolly-headed Dwarf and Scotch Thistles. In marshes and by the riversides are dotted the tall Purple Loosestrife (*Lythrum Salicaria*), the Hemp Agrimony (*Eupatorium cannabinum*), and the two Skull-caps (*Scutellarias major* and *minor*). The rivers themselves teem with plant-life, and numerous Pondweeds (*Potamogeton*), Water Milfoils (not to be confused with the common Milfoil, a plant of the Composite tribe), Arrow-heads, and the beautiful Water-Lilies, which sink under the water at sunset, flourish luxuriously. Thus it will be seen that many a pleasant hour may be profitably spent by a lover of wild flowers. *Frank Gammon, Hamstead Park Gardens, Newbury.*

ILEX GOLDEN QUEEN.—In *The Field*, some years ago, the origin of this, the best of all variegated Hollies, was widely discussed; and the fact that it is a sport from the common Holly was brought to my remembrance a few days ago by observing several branches of this form on a large specimen of the common Holly, in a private garden at Altrincham. It is from this very specimen that Messrs. Clibran have, as I understand, worked up a large proportion of their stock of Golden Queen, which is perfectly true to name. *J. C. Tallack.*

INSECTS IN THE FLOWERS OF ARISTOLOCHIA.—With reference to the concluding portion of the article on *Aristolochia arborea*, under "New or Noteworthy Plants," in your issue of March 22, 1902, I may inform you that I have often found carrion flies inside the *Aristolochia* flowers, especially in those of *A. gigas* *Sturtevantii*, some time after the flowers have opened, and have often shown them imprisoned inside to others. The account given at p. 224, vol. ii., of Kerner and Oliver's *Natural History of Plants*, about the imprisonment of the midges for the purpose of fertilisation and their subsequent liberation appears to me to be correct as far as my observations go, and the probable reason why you have not found any insects [a few only] in dried flowers may be that the flowers were collected before being fully opened, or when they had become somewhat old, and after the flies had left. There is at any rate no doubt about the flies being inside living flowers a little time after they have fully opened. *C. D. Mahaluxmivata, Superintendent of the Municipal Gardens, Bombay.*

THE RETENTION OF THE FLOWERS OF ORCHIDS ON THE PLANTS.—I was glad to see Mr. Bound's remarks in reference in a recent issue of the *Gardeners' Chronicle*, for there is no doubt that the practice of retaining the flowers for long periods of time is a cause of exhaustion in the plants. The development of a large number of flowers must tax the energies of a plant greatly, and the strain is maintained for as long a time as the flowers remain; and perhaps it is after the flowers are of full size that the greatest strain is felt, and the greatest demand made on the reserves of matter in the pseudo-bulbs sustaining them. I have never

seen an explanation of this phenomenon. There will be a certain loss by transpiration from the perianth to be made good by the pseudo-bulb, but I am inclined to think the true cause of the exhaustion is to be found in the essential organs of the flower. A petal or sepal can be removed with impunity, the remaining ones being in no way impaired; but remove the pollen-masses or pollinate the stigma, and witness how suddenly there is a collapse. Reproduction being the purpose of the flower, and fertilisation being secured, the flow of elaborated nutriment would be towards the ovary, acting detrimentally on the sepals and petals of the flowers and plant alike. But whatever the precise cause, there is no doubt that the flowers by remaining for any length of time act prejudicially, reducing the pseudo-bulbs in weight, and enfeebling the plant generally; and that these ill-effects are accentuated after the flowers are matured there is much evidence to show. This loss of strength in a plant can be avoided by following Mr. Bound's advice, that is to remove the flower-spikes early. I believe that the flowers will preserve their lustre longer if cut early and properly looked after, than if left on the plant. *J. M. Black, gr. to R. G. Thwaites, Esq., Streatham.*

FROST IN KENT.—The minimum thermometer at 1 foot from the ground registered 8° of frost on the night of May 15. Potatoes are all cut down; *Ampelopsis Veitchii* on a south wall quite blackened, also Ivy on a wall. It is the sharpest frost that I can remember in this part of the country so late in the present month. Apple blossom is very much damaged. The weather for the last fortnight has been anything but spring-like. *David Fairweather, Bifrons Park Gardens, Canterbury.*

NEW INVENTIONS.

A CREEPER CLIP.

We have recently received from the Patent Creeper Clip Co., at Redditch, a little metal contrivance for securing the shoots of creepers and climbing plants to walls and board fences. It is simply a narrow strip of metal, perforated with three holes, by which it may be nailed, or rather tacked to the wall, the tacks used being of such a temper as to easily penetrate



FIG. 111.—A CREEPER CLIP.

ordinary bricks. The loose half of the strip is bent so as to form a kind of shepherd's crook, into which the shoot is pushed easily, and safely retained without exerting any injurious pressure on the most tender shoots. Where a neat appearance is desired, as is often the case in boudoir window recesses, where plants are grown at the sides, in verandahs, glass-houses, and on ornamental garden walls, these clips supply a "long-felt want," and the amateur who admires neatness should not lose sight of this useful invention.

AN UNDENTABLE SYRINGE.

The sort of implement gardeners have been looking after for a hundred years has been invented at last. Everyone knows how easily the ordinary smooth brass or tin cylinder is rendered unworkable by a dent, and how difficult it is to obliterate the defect. Now, by simply furnishing the barrel or cylinder with an outside corrugated covering, we have a syringe which, under ordinary fair usage, cannot be rendered unserviceable by a dent. It is sold under the name of the Four Oaks Undentable Syringe.

NURSERY NOTES.

UNCOMMON PLANTS AT EXETER.

LOOKING through Messrs. R. Veitch & Sons' nursery at Exeter recently, I could but notice, loosely trained to the front of a greenhouse wall, a pretty scarlet-flowered Gooseberry, rarely seen nowadays, *Ribes speciosa*. The wood is hard and very spiny, the foliage small and rather rounded, and the projecting branches carry in quantity pendent, Fuchsia-like reddish flowers. Mr. Veitch mentioned that it was well suited for a warm wall.

In one of the houses I noted numerous well-grown and flowered plants of the Transvaal Marguerite, or blue Daisy, *Dimorphotheca Ecklonis*. The flowers are of a bluish tint externally, and when fully expanded quite white; they are about the size of those of ordinary Marguerites, and of the same single form, but are borne on quite long stems, singly. This is evidently a charming greenhouse plant. *A. D.*

Obituary.

THOMAS DAVIES.—We regret to announce the death of Mr. Thomas Davies, of the Wavertree Nursery, Liverpool, which occurred on Tuesday, May 6, at Chestnut Grove, Wavertree. Davies' nursery, Wavertree, was of very long standing, and T. Davies was born there on July 22, 1829. He began to work in the nursery at the age of thirteen years, and four years later he came to London, and entered the Pineapple nurseries of Messrs. J. A. Henderson; thence he went to Linton Hall, Beds, at that time the residence of the late J. Shaw Leigh, Esq. Returning to Wavertree, he took up a prominent position. He was for many years on the committee of the old Liverpool Horticultural Society, and was for fourteen years chairman of the Woolton Horticultural Society. Differences between master and men at the nursery were of rare occurrence, and seldom serious, as may be inferred from the fact that one nursery hand has been employed nearly sixty, several fifty, and one forty-five years. The funeral took place on Saturday last at Childwall, and was numerously attended.

J. G. BROWN.—We sincerely regret to announce the death, on the 3rd inst., of Mr. J. G. Brown, of the Manchester firm of Brown & Wilson, seedsmen, at the early age of thirty-nine years, after a brief illness. Mr. Brown was the only son of the late Mr. Matthew Brown, who was largely instrumental in building up the great seed business of Dickson, Brown, & Tait, Manchester, and who was as widely esteemed throughout the North of England as he was widely known. After receiving a liberal education, Mr. J. G. Brown spent some time with the late Mr. B. S. Williams, of London, and with Mr. Ernest Benary, of Erfurt, learning the nursery and seed business. Fourteen years ago he entered into partnership with Mr. James Wilson, and the two have during that period carried on a flourishing business in Manchester in the seed trade. Mr. Brown's excellent personal qualities had endeared him to hundreds of people of every station in life, and his premature decease will be widely lamented. He had never married, and two sisters survive him.

ENQUIRY.

THE Editor would be glad to know from contributors to the *Gardeners' Chronicle* if, as a correspondent states, there is a fungus which attacks *Begonia Gloire de Lorraine*, denuding entire batches of the plants of their leaves.

SOCIETIES.

ROYAL HORTICULTURAL.
Scientific Committee.

MAY 6.—*Present*: Dr. M. C. Cooke (in the chair); Messrs. Sutton, Drury, Veitch, Saunders, Bowles, Douglas, and Holmes, Dr. Müller, Revs. W. Wilks, Engleheart, and G. Henslow, Hon. Sec.

Turnip seedlings.—With reference to Mr. Gould's account of the great variation in the seedlings of a "Red Tankard" Turnip, Mr. Sutton thought there must be some mistake, as it was contrary to all experience at Reading; but Mr. Wilks confirmed it in the case of Cabbages. Having an excellent variety, very useful late in the season, he saved two plants for seed, covering them with a net. In the following year they produced all sorts of the most mixed form of Cabbages, Coleworts, &c., but not one single plant like the parents. The committee would be glad to hear of any similar cases. The physiological interpretation would seem to be that, from constant indiscriminate crosses, Cabbages and Turnips, &c., have a very mixed constitution. As long as any kind is grown in masses, the crossing keeps up an average form. When isolated, reversion to the various races takes place, the "blood" of which is in the individual. Mr. Sutton suggested experiments to be carried out at Kew or Chiswick to test these remarkable results.

Gooseberry Trees Dying off.—Mr. WILKS showed branches withering and dying. Mr. Veitch observed that it was not uncommon after an excessively dry season like the last, and that some varieties are more liable to perish than others, the more vigorous kinds withstanding it.

Primroses Malformed.—Mr. SUTTON brought specimens of umbellate, or, more strictly speaking, "capitate" forms, the flowers being sessile on the top of a peduncle. There were four flowers with linear bracts. The central flower was multifold, with seven or eight petals, &c.; the other flowers were either normal or with a sub-petaloid calyx. The petal lobes in some forms were unequal. They were from a wood near Reading. He also brought from the same wood double-flowered wild Anemones. The late Rev. Prof. J. S. Henslow collected them in Hitcham Wood, Suffolk, in 1845.

Tacca cristata.—Mr. ODRELL sent flowers of this anomalous plant, having one of the numerous filiform bracts, broadening at the base, thus reverting towards the form of the larger outer series. The question as to the function of the filiform appendages was raised, for they are suggestive of some similar use to those in certain Cyrtopodiæ.

Gloxinia Flowers with Excrecences from the Outer Surface.—He also sent blossoms with this well-known peculiarity, the special feature being the fact that their abnormal character was now very constant for four years on the same plant.

Palm diseased.—Mr. SAUNDERS reports as follows upon the Palm submitted to him at the last meeting: "I have carefully examined the small Palm (*Kentia*) which I took away on Tuesday for that purpose. I forget the name of the grower, but we had some before us at a recent meeting of the Scientific Committee, which were reported on by Mr. Odell. At the roots of the Palm I found several specimens of snake millipedes (*Julus guttatus* and *J. londinensis*); of the latter I only found one specimen. These are well known and most destructive pests. The only way of getting rid of them, short of repotting the plants and picking out the pests, is to bury small slices of Turnips, Carrots, or Potatoes in the soil just below the surface. The millipedes are very fond of these roots, and will probably be attracted to them. The traps should be examined every morning. If a small skewer of wood be stuck into each slice it will show where the latter has been buried, and render it easier to handle."

Lastrea (Nephrodium) Thelypteris, Marsh Buckler Fern.—Mr. DRURY exhibited fronds of a very fine and thoroughly polydaetyulous variety of this species, found by Mrs. Puffer in Massachusetts, U.S.A.—a clump of 8 feet by 2 feet or 3 feet wide—a very old plant. It is the more interesting as, although this species is indigenous to Great Britain, and is locally abundant in many marshy districts, it has never even afforded a subvariety in this country, despite its having been certainly assiduously hunted for half a century. In this case the pinnae are foliosely multifold throughout.

Tulipa sylvestris.—Mr. CHAPMAN sent the following communication: "I noticed from the report of the Royal Horticultural Society's Scientific Committee (April 22) that Mr. Worsley showed the above Tulip.

Having several of the species in flower in the borders here, I mentioned the matter to Mr. Cookson (of Oakwood, Wylam-on-Tyne), and have ascertained the following particulars from him, which I thought might perhaps be of interest. The plants we have here were collected and brought by Mr. Cookson from a friend's wood, about eleven miles north of Newcastle-on-Tyne. Although they must have been growing in this particular spot for ages, Mr. Cookson was the first to notice the Tulip characteristic about the apparent "weed." I use the word weed, for, from what Mr. Cookson tells me, they grow in hundreds of thousands, scarcely ever exceeding 3 inches in height, and never flowering where growing in the wild state. After gathering the plants, they were planted in the borders. It took three years before they produced flowers, when their identity was established. Since then, where the plants have not been moved, it is interesting to note that, in almost every instance, twin flower scapes are produced, as in the enclosed specimen. It may also be of interest to note that it has a peculiar character of forming a long rhizome between each bulb, giving it such a roving nature in cultivated ground that although planted in a bed or patch, it will be found at a very different position from where it was planted the following year. I notice S.W. Yorks, being the farthest north given in the report; it might be interesting to know that it can be still found as a wild plant in Northumberland."

LINNEAN.

MAY 1.—Professor S. H. Vines, F.R.S., President, in the Chair.

Messrs. John Parkin, Charles Gilbert Rogers, and Otto Stapf were elected Fellows; and Messrs. Alfred Giard, Hans Jacob Hansen, Charles Sprague Sargent, Franz Eilhard Schulze, and Julius Wiesner were elected foreign members of the society.

The President announced that H.R.H. the Prince of Wales had consented to become a honorary member of the society.

The President further announced that the Council had decided to award the Gold Medal of the society this year to Prof. Rudolf Albert von Kölliker, of Würzburg, in recognition of his important contributions to zoological science.

Mr. J. E. HARTING, F.L.S., exhibited photographs of a living specimen of the African Shoe-bill (*Bakeniopsis rex*), forwarded from Cairo by Sir William Garstin, K.C.M.G., and gave some account of the bird, and of the different views which had been expressed by zoologists regarding its affinities and systematic position.

In the absence of the authors, who were abroad, the following papers were communicated by the Zoological Secretary, Prof. Howes, F.R.S.:—(1) Dr. Elliot Smith, "On the Cerebellum of the Lemurs"; (2) Dr. Elliot Smith, "On the Brain of the Elephant Shrew (*Macroscelides elephantopus*, Shaw)"; (3) Dr. R. Broom "On the Early Condition of the Shoulder-girdle of the Polyprotodont Marsupials *Dasyurus* and *Perameles*."

ROYAL GARDENERS' ORPHAN
FUND.

ANNUAL DINNER.

MAY 8.—The fourteenth annual dinner in aid of this excellent charity took place on the 8th inst. at the Hotel Cecil, Strand. Covers were laid for 145 persons, and Leopold de Rothschild, Esq., presided. Amongst those present were Messrs. Harry J. Veitch, C. E. Keyser, Herbert Hicks, Leonard Sutton, B. F. Smith, J. Gould Veitch, H. B. May, F. Kedge (Hon. Solicitor), Dr. Bott, George Monro, R. Piper, Joseph Rochford, W. Sherwood, W. Y. Baker, S. M. Segar, H. J. Cutbush, W. J. Nutting, George Paul, Rudolph Barr, George Barr, J. A. Laing, G. H. Cuthbert, J. McKerchar, J. Douglas, S. T. Wright, J. F. McLeod, J. Hudson, G. Reynolds, W. Roupell, T. W. Sanders, J. Asbee, H. G. Cove, R. P. Glendinning, Brian Wynne (Secretary), &c.

The room and tables were beautifully decorated with plants and flowers supplied from various nurseries and private gardens. The musical arrangements, under the management of Mr. Herbert Schartau, gave much satisfaction.

In proposing the toast of the King, the Chairman remarked upon the interest his Majesty takes in the development of the gardens at Sandringham and Windsor. Both this toast and that of her Majesty the Queen, the Prince and Princess of Wales, &c., were received with musical honours.

Mr. Leopold de Rothschild next proposed the toast of the evening, "The Royal Gardeners' Orphan Fund," and said that no men in the world required a greater number of qualities than were necessary to make a first-class gardener. He needed culture, robust health, a knowledge of botany, chemistry, meteorology, architecture, an appreciation for harmony in colours, &c.—a rare combination of physical and mental qualities. The emolu-

ments received by gardeners generally were not equal to what is asked from them, and it was a praiseworthy object to seek to help the children of those gardeners who fell a victim to early decease, in many cases, through the trying nature of their work. Since the Fund was established nearly 160 orphans had received its benefits; a sum of nearly £10,000 had been disbursed in weekly allowances, and a small sum had been spent in the provision of clothing, &c. There were eighty-seven children chargeable to the Fund at the present time, at a cost of £1,100 per annum. Mr. Rothschild recalled the time when he knew but three florist's shops in London, one in Maddock Street, and two in Covent Garden. "Better Roses could now be bought in the streets for a penny, than could be purchased then for a guinea." After expressing pleasure that the new Hall scheme of the Royal Horticultural Society was meeting with success, the Chairman concluded with an appeal to those present to help the Orphan Fund to the best of their power.

Mr. C. E. Keyser (Vice-President), in responding, read a letter from Mr. N. N. Sherwood (Hon. Treasurer), regretting that his doctor did not think him well enough to attend, and sending a donation of £25. Mr. Keyser expressed the sorrow everyone felt at Mr. Sherwood's absence. They were very grateful, however, to Mr. de Rothschild for coming amongst them. The Chairman belonged to a family who had done probably more than any other to encourage gardening. Their own gardens were examples. Mr. Keyser appealed for increased support for the Orphan Fund, and said that at Reading they had an auxiliary of the Gardeners' Royal Benevolent Institution. He thought they might do something in the same way for the Orphan Fund.

"Gardeners and Gardening" was proposed by Mr. Leonard Sutton (Reading), who spoke very appreciatively of gardeners, asking that employers would give them some consideration and encouragement, and allow them time and opportunities to improve themselves by attending horticultural exhibitions, and in other ways. Those who obtained pleasure from their gardens ought to help those who had contributed to that pleasure.

Alderman Piper responded to this toast, and at some length rejoiced that gardeners were not ground down by a trades union.

Mr. J. Asbee proposed "The Visitors," in an interesting speech. He said that gardeners had three kinds of visitors to their gardens—(1), the mischievous visitor; (2), the agreeable gardener; (3), the business man; and humorously described each of these types, concluding by welcoming every visitor present that evening. The Vicar of Edmonton (Rev. E. A. B. Sanders), replied in a happy vein.

Mr. H. B. May (Chairman of the Fund Committee) gave the toast of "The Chairman," and Mr. de Rothschild having replied, the Secretary said that the Chairman's list of subscriptions, and Covent Garden Market list, &c., amounted to £711 2s. 6d., a larger sum than for six years past. Amongst the contributors were the following:—Leopold de Rothschild, Esq., 20 gs.; Messrs. N. N. Rothschild & Sons, 50 gs.; A. de Rothschild, Esq., 10 gs.; Leonard Sutton, £50; N. N. Sherwood, £25; W. Sherwood, £5; E. Sherwood, £5; J. F. McLeod, £21; Geo. Reynolds, £38 3s.; Jas. Hudson, £30; W. S. Deacon, 10 gs.; Sir T. Lawrence, 10 gs.; Messrs. James Veitch & Sons, 10 gs.; H. J. Veitch, 10 gs.; W. Nutting, 10 gs.; Geo. Cuthbert, 10 gs.; G. H. Richards, 10 gs.; C. E. Keyser, £10; Thames Bank Iron Company, 7 gs.; T. W. Sanders, £7 10s.; Barr & Sons, £5 15s. 6d.; Dr. H. Bond, £5; Anthony Waterer, 5 gs.; G. E. Raphael, £5; Dicksons, Ltd., Chester, £5; F. A. Bevan, 5 gs.; Asher Wertheimer, 5 gs.; A. Beit, 5 gs.; J. H. Houldsworth, £5; Charles Cotes, £5; H. B. May, 5 gs.; C. A. Smith-Ryland, £5; Robert Fox, £5; Mrs. W. G. Head, £5; The Gardeners' Chronicle, Ltd., £5; A. Levita, £5; H. Oppenheim, 5 gs.; S. M. Segar, £5; W. Cutbush & Son, 5 gs.; Thos. Jeffreys, 5 gs.; J. T. Anderson & Sons, Ltd., 5 gs.; Herbert Hicks, 5 gs. Mr. Asbee's list from the Covent Garden tables amounted to £129 12s., a capital sum from the market growers and salesmen. Incidentally the Secretary announced that the Fund would benefit to the extent of £100 by the recent death of Mrs. Wills, of Messrs. Wills & Segar.

Mr. Herbert J. Cutbush proposed "The Press," in response to which Mr. R. Hooper Pearson (*Gardeners' Chronicle*) pointed out that the first treasurer to the Fund was a representative of the Press; two of the three joint secretaries appointed by the meeting at South Kensington were pressmen, five members of the original committee were pressmen, and the first meeting of that committee was held in a newspaper office, at 41, Wellington Street, on March 25, 1887.

The proceedings closed with a hearty appreciation of the services of the secretary, Mr. Brian Wynne.

CROYDON AND DISTRICT HORTICULTURAL IMPROVEMENT.

MAY 7.—This young and vigorous society, which is more generally concerned in holding meetings for the discussion of horticultural subjects, held an exhibition on the above date of exceeding interest. The display was made in the Art Galleries, and there were no entrance fees or prizes. The Secretary, Mr. J. Gregory,

worked hard, and deserved success. The following were some of the exhibits:—

Messrs. J. Cheal & Sons, Crawley, a collection of specimen flowering trees and shrubs; Mr. Cornish, gr. at "The Joldwynds," Dorking, hardy flowers; Mr. W. Bentley, gr. to Geo. Curling, Esq., Addiscombe, Ferns and six well-grown and flowered plants of *Alonsoa inaeisifolia*; Mr. M. E. Mills, gr. to Frank Lloyd, Esq., Coombe House, Croydon, spring flowers, covering a space of 20 ft. by 4 ft.; Mr. Vander Meereh, London Road and Sellhurst Nurseries, foliage plants, &c.; Dupré et Cie., basket of Iris and Lilac; Mr. Jefferies, gr. to Mrs. Lascelles, Roses; Mr. F. Oxtoby, gr. to J. J. Reid, Esq., Coombe Lodge, Pelargoniums and double-flowered white Stocks; Mr. J. Dingwall, gr. to W. F. Stanley, Esq., Cumberlow, South Norwood, *Cineraria stellata*; Mr. J. A. May, gr. to Wickham Noakes, Esq., Selsdon Park, Auriculas and *Cinerarias*; Mr. Tennant, florist, High Street, Rhododendrons, *Spiraea japonica*, and *Crotons*; Mr. E. Kromer, Roraima Nursery, Bandon Hill, Croydon, Orchids; Mr. J. R. Box, West Wickham and Croydon, *Azalea mollis*, *Gloxinias*, *Calceolarias* and Tulips, &c.; Mr. Thomas Butcher, florist, &c., Croydon and South Norwood, Palms, foliage plants, and bouquets; Mr. P. F. Bunyard, eggs of insectivorous birds.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

MAY 12.—Nine new members were elected, making fifty-three in the five months this year. Three members were reported on the sick fund. The death certificate of the late Mr. John Crawford was produced, and £18 1s. 11d., being the amount standing to the late member's credit, was voted to the widow, also a cheque for £5 from the Benevolent Fund, this being considered a very urgent and deserving case for assistance.

HORTICULTURAL SHOW AT CHELTENHAM.

MAY 14.—The seventy-seventh annual show of the County of Gloucester and Cheltenham Royal Horticultural Society was opened at the Montpelier Gardens, Cheltenham, on Wednesday last. There was an exceptionally fine lot of exhibits, and these were tastefully arranged in two large marquees on either side of the principal walk.

The ornamental groups of flowering and foliage plants were, as usual, a great attraction; while Mr. J. H. WHITE, Worcester, had a splendid show of herbaceous and flowering plants (not for competition), and Mr. G. W. MARSH, Cheltenham, for a grand group, was awarded a Certificate of Merit. Mr. J. JACKSON also contributed a good display of fruit, Mr. J. HORLICK (High Sheriff) one of *Calceolarias* and other flowering plants, and Mr. J. CYPHER a collection of pot and other plants (all not for competition).

Coming to the prize list, in the class for an ornamental group of flowering and foliage plants, arranged for effect, to cover 200 square feet (open to all England), Mr. JAMES CYPHER, of Queen's Road Nurseries, Cheltenham, was awarded premier honours; Mr. W. VAUSE, Leamington, running a close 2nd.

In a similar group for 100 square feet (amateurs only), Mr. H. O. LORD, Lilleybrooke (gr. Mr. F. May), was given 1st prize; while Mr. CYPHER beat Mr. VAUSE in the Open to all England class for stove or greenhouse plants in flower.

Mr. CYPHER also gained 1st position for six plants (three in flower and three ornamental foliage), being 1st for a group of Pelargoniums, for six zonal Pelargoniums, 1st for the best collection of herbaceous and other hardy cut flowers (open), and 1st for a group of Orchids to cover 100 square feet, in which foliage plants were used; Mr. VAUSE being placed 2nd in the latter class, and Mr. F. SMITH, Prestbury, 3rd.

Mr. J. HORLICK, of Cowley Manor (gr., M. J. Madicks), carried off the 1st prize for herbaceous *Calceolarias*, for *Caladulias* (open), and for twelve plants in flower (amateurs only). Mr. G. W. MARSH took premier honours for *Cinerarias*, and for three pots of *Lilium Harrisii*.

For fruit, Mr. JOHN JACKSON, Cheltenham, carried off the premier honours for collections of fruit, six dishes, Pines excluded, for Peaches, and for a dish of Nectarines.

ROYAL CALEDONIAN.

UNDER GARDENERS' COMPETITION.

LAST summer you, in a most encouraging way, referred to the competition which we had started for under gardeners. The general feeling was that we should be satisfied if we got eight or ten competitive plans; but twenty-one were sent in. I enclose a copy of the report on these by the judges, which speaks for itself.

The result of the competition has been so gratifying that Sir John Gilmour, Bart., has kindly renewed his donation to enable the Society to renew the competition on similar lines, and another sketch-plan for competition is being prepared. Our spring show was held on

Wednesday and Thursday of last week when the competitive plans were all exhibited, and not the least gratifying feature of the show was that along the line of plans there was almost continuously a crowd of interested spectators, a great many of whom were young men. I hope shortly to be able to send you particulars of the new competition and—may I put it thus—perhaps you will again do the young gardeners the service which you did them last year in encouraging them to go in for the competition? [Certainly, Ed.] One criticism was made that the prizes offered were small for the amount of work required, but it has been most gratifying to receive letters from the competitors expressing their pleasure at having the opportunity to go in for such a competition, and their desire to know wherein they had failed. The judges' report as regards the prize-winning plans is very critical, and I intend, in returning the plans to the unsuccessful competitors, to give them the same advantage, by pointing out wherein they have made mistakes.

To-day I have had an inquiry from a young fellow in a nursery as to whether young gardeners in nurseries are eligible to compete. My answer to that is, most certainly they are, and we should be glad to receive plans from them, as well as from any other young gardeners. This is a competition in which I have taken a very great personal interest, and I desire to express to you and the other horticultural papers my sincere thanks for what you have done towards making the competition successful: P. Murray Thomson, Secretary.

[The judges, we may add, were Mr. John McHattie, Superintendent of the Public Parks, Edinburgh; and Mr. J. Whitton, who occupies the like position in Glasgow. Ed.]

READING & DISTRICT GARDENERS' MUTUAL IMPROVEMENT.

THE last meeting of the winter session was well attended, when Mr. E. H. Jenkins, of Hampton Hill, gave a most interesting paper on "The Rock Garden." The discussion which followed was taken part in by Messrs. Stanton, Neve, Bassel, Townsend, Cretchley, Hinton, Lever, and Fry. The display of flowers was interesting, and consisted of honorary exhibits and other exhibits, and included a pretty lot of *Polyanthus* from Mr. W. TOWNSEND, gr., Sandhurst Lodge; and from Mr. G. STANTON, gr., Park Place, sprays of *Bougainvillea speciosa* and *Browallia Jamesoni*. Mr. H. HOUSE, gr., Oakfield, showed twenty-four beautiful bunches of zonals (twelve seedlings and twelve named varieties); Mr. F. LEVER, gr., Hillside, a group of *Cineraria stellata*; and Mr. F. ALEXANDER, gr., St. Mary's Hill, a large plant of *Dendrobium nobile*.

ANSWERS TO CORRESPONDENTS.

AGRICULTURAL SALT AS A DRESSING FOR AN ORCHARD INFESTED WITH COUCH-GRASS: Pan-Adam. The amount of salt that would be required to kill the Couch-grass would likewise kill the fruit-trees. The best way of proceeding is to open a trench on one side of the piece of land, and with steel five or six-tined forks dig the land 2 spits deep—of course, much less deep where there are tree roots, breaking up the soil, and extracting every bit of Couch-grass roots, depositing it in good-sized heaps; then harrow the land and collect every bit brought to the surface. The roots and herbage may be dried a little, then burnt, and the ashes spread over the land; or it may be formed into long, flat-topped heaps, together with quicklime, and left to decay, which would soon take place, owing to the heat generated in the heaps. These heaps require turning once or twice, in order to bring about the decay of the whole. The remains form a first-rate substance for drilling with Turnip-seed, or as a top-dressing to garden plots.

ALPINE GARDEN: E. H. M. An alpine garden is one in or on which plants found on mountains are cultivated. Usually it consists of a sort of rockery, the materials of which are so arranged that a variety of aspects are afforded for the various species of plants, some liking full sunshine, others shade, and so on. Means are usually taken to afford the plants the sort of soil or rooting material they demand, some succeeding best in granitic detritus, others in limestone, sandstone, tufa, peat-loam, vegetable mould, &c.

BLACK ON WHITE GRAPE-VINE: An Old Subscriber. The inarching of Appley Towers on the Syrian would not be so likely to in-

fluence colour in the former as the flavour. We are curious to know the result of the union. Usually, but there are exceptions, the stock does not influence either colour or flavour, vide hardy fruits grafted on wilding Pears, Crabs, Prunus, &c. Size of fruit, on the other hand, is affected adversely by the stock, as we see it in Plums on the Damson, Pears on *Cratægus*, and some varieties of Pears on the Quince stock.

BOOKS: E. H. M. You should obtain a small manual entitled *Alpine Plants*, by W. A. Clark, published by Upcott Gill, 170, Strand, London, W.C.; *The Making of Flowers*, by the Rev. Prof. G. Henslow, M.A., published by the Society for Promoting Christian Knowledge, Northumberland Avenue, London, W.C.; *Plant Breeding*, by L. H. Bailey, published by Messrs. Macmillan & Co., St. Martin Street, London, W.C. See "A. C." next week.

CORRECTION: Tulips of Long Ago. The reference made on p. 285, col. A, in our issue for May 3 last should have been *Gardeners' Chronicle* April 29, 1899, not May 13, 1890.

DENDROBIUM THYRSIFLORUM: W. J. S. Thank you for a good photograph of a fine plant; but it has been repeatedly figured.

EVERGREEN OAK: Reseder. Apparently the work of *Lithecotletis messaniella*, one of the small leaf-mining moths. The branch you sent has been kept under observation, in the hopes of rearing the perfect insect; but none have yet appeared, although this is about the time they emerge from the chrysalis now lying in the leaf-blisters.

FRUIT AND VEGETABLE: H. G. A fruit in a botanical sense is that which bears and encloses the seed. A "vegetable" in a botanical sense, is a plant; in a culinary sense it is any part of a plant used for culinary purposes. Whether you will consider this a "defensible difference" we cannot tell.

FAIRY RINGS IN GRASS: Wakefield. Dig up a foot in depth the soil where the last ring grew, and about 6 inches beyond this where the ring will grow this year, and replace it with fresh soil and cover with new turf. If you do not care for so much labour, strew salt rather heavily where the next ring will come (and the rings are ever wider and wider from the centre with the years), and manure the central portion, dig it and returf from a clean source.

GRAPES RUSTED: J. R. The fruits sent are badly rusted, from some cause of which we are not cognisant; it may be cold air blowing on them when moist and warm, or from excessive use of sulphur on the heating apparatus, or from throwing water on the same when this is excessively hot, and causing thereby much steam to arise in the vinery.

HOLLY-LEAVES DISFIGURED: J. T. S. The work of a fly—*Phytomyza ilicis*; figured and described in the *Gardeners' Chronicle* for 1846,

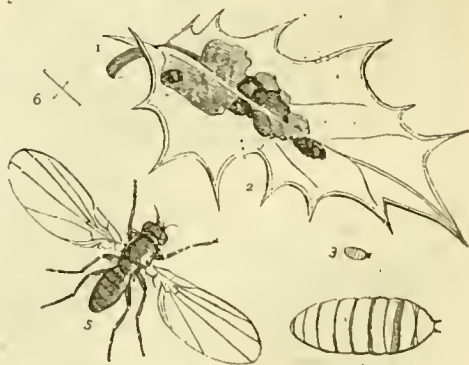


FIG. 112.—THE HOLLY-LEAF FLY (PHYTOMYZA ILICIS).

p. 444 (see fig. 112). The fly is of a greyish-brown colour, clothed with small black hairs, and larger bristles scattered over,

especially the head and thorax. Sprinkle soot and lime over the leaves when wet with dew or rain, to deter the flies from depositing their eggs on them.

LEAF: G. E. M. Shrivelled beyond recognition. If you expect us to take trouble for you, the least you can do is to take some pains to send good specimens in good condition.

MANURE FOR VINES: C. F. The "vitriolised" bones are simply superphosphate of lime, which may be applied safely 6 oz. to the square yard. Mineral phosphates differ greatly, and the higher quality is the best to use in this case, and is nearly as cheap as the lower, as a less quantity is required. The bone superphosphate is the best, and it should be crumbly and soft. Kainite, that you enquire about, would supply potash, and if you use three parts superphosphate, one-half part kainite may be used in conjunction with it, and 4 to 5 oz. per square yard would suffice for one application, and not more than two may be given in a year. For quick action we should recommend either the best guano, fish manure, and muriate or nitrate of potash in preference to superphosphate, &c.

MENDEL'S FORMULA: X. Put simply, this means that when a cross is made between one parent A, and another parent a, the resulting progeny will show, out of every four individuals, one like A, one like a, and the other two will be intermediate between A and a. This applies to one particular character selected for the purpose, e.g., wrinkled seeds or round seeds in the case of a Pea, so that in a cross between a wrinkled Pea and a round Pea, we may expect in the progeny out of every four, one wrinkled, one smooth, and two more or less intermediate forms. One of the original forms, let us say A, is dominant in one generation and asserts itself, while the other a is recessive, remains latent till the next generation, and may then in its turn become dominant.

MUSCAT GRAPES AND XL-ALL: Will "A. Stote" kindly furnish his full name and address, not necessarily for publication, but as establishing his *bona fides*.

MUSHROOMS IN AN ORCHARD UNDER GRASS: Pan-Adam. The growth of Mushrooms might be safely carried out if in moderate extent, and mostly in the central spaces between the lines of trees. If much of the land became occupied by Mushrooms, it would be robbed of its nitrogen to a large extent. You might bury the spawn of the common Mushroom, *Agaricus campestris*, not to be confused with the much less delicate Horse-Mushroom, *A. arvensis*, which is larger, and the gills at first are of a dirty white tint, not pink, as are those of *A. campestris*. Other species of edible fungi worth attempting are the common Morel, *Morchella esculenta*; the Lanky Morel, *M. semi-libera*; Truffle, *Tuber aestivum*; White Helvella (*Helvella crispa*), and Shaggy Caps (*Coprinus comatus*), and many more. As a very useful manual, furnished with coloured plates, describing our edible and poisonous Mushrooms, we would advise to get that of Dr. M. C. Cooke, published by the Society for Promoting Christian Knowledge, Northumberland Avenue, London, W.C.

NAMES OF PLANTS: S. G. S. 1, *Corydalis nobilis*; 2, *Prunus*? 3, *Orobis vernus*; 4, *Berberis Darwinii*; 5, *Centaurea montana*; 6, *Lamium maculatum*.—**G. D.** 1, *Saxifraga granulata*, double fl. var.; 2, *Geum urbanum*; 3, *Spiraea prunifolia*; 4, *Scilla nutans*, white var.; 5, *Stellaria Holostea*; 6, *Cardamine pratensis*; 7, *Veronica Chamædrys*.—**J. E. I.** 1, *Ereilla spicata*; 2, *Tecoma jasminoides*; 3, *Azara microphylla*; 4, *Akebia quinata*.—**Very Anxious.** *Thuja occidentalis*, *Ribes sanguineum*.—*Newbury House.* *Akebia quinata*.—**F. Woods.** *Pittosporum bicolor*.—**G. A. Chorizema varium.**—**W. S., Colchester.** 1, *Veronica Traversii*; 2, *Berberis dulcis*; 3,

Anthericum lineare variegatum; 4, *Farfugium grande*; 5, *Fuchsia procumbens*; 6, *Cyrtomium caryotideum*; 7, *Pteris adiantoides*; 8, *Polystichum angulare*; 9, *Pteris serrulata major*; 10, *Davallia canariensis*.—**A. D.** 1, *Menyanthes trifoliata* (Buck-Bean); 2, *Agathæa cœlestis*; 3, *Spiræa media* (confusa); 4, a garden Tulip; 5, *Rose L'Idéal*.—**Amateur.** 1, *Cryptomeria japonica* var. *elegans*; 2, *Berberis* (*Mahonia*) *aquifolia*; 3, *Kerria japonica*, double-flowered; 4, *Kerria japonica*; 5, *Veronica salicifolia*; 6, *Doronicum caucasicum*; 7, *Berberis Darwinii*; 8, *Euonymus radicans variegatus*.—**B. W.** *Tiarella cordifolia*.—**P. & Sons, Cotham.** *Mackaya bella*.—**J. F. J.** 1, *Sempervivum tortuosum*; 2, *Carex pendula*; 3, *Cyrtomium falcatum*; 4, *Anemia* (*Anemidictyon*) *Phyllitidis*.—**H. W.** *Bilbergia nutans*.—**H. D.** 1, *Dendrobium aggregatum*; 2, *Adiantum formosum*; 3, *A. concinnum latum*; 4, *Sempervivum tortuosum variegatum*.—**A. S.** *Wolverhampton.* 1, *Aristolochia elegans*; 2, *Dendrobium Parishii*; 3, *D. moschatum*; 4, *Cattleya Forbesii*; 5, *Reineckia carnea variegata*.—**Spade.** All good varieties of *Dendrobium nobile*; 2, with pink edge to the petals, a distinct form.—**Scoticus.** 1, *Medicago scutellata*; 2, *Primula acaulis* variety.—**J. P.** *Acer campestre*.—**G. T. R.** 1, *Veronica gentianoides* var.; 2, *Anchusa italica*; 3, *Lychnis dioica*; 4, *Euonymus europæus*; 5, *Heuchera sanguinea*; 6, *Anthurium crystallinum*.—**R. B. H.** 1, *Sedum acre*; 2, *Saxifraga hypnoides*; 3, *Saxifraga muscoides*; 4, *Antennaria tomentosa*; 5, *Spergula pilifera aurea*; 6, *Mœhringia muscosa*; 7, *Sempervivum tortuosum variegatum*; 8, *Centaurea ragusina*.—**N. F. P.** 1, *Ranunculus aquatilis*; 2, *Phlox setacea*; 3, *Luzula campestris*; 4, *Nepeta Glechoma*.—**E. Morland.** 1, *Euonymus radicans variegata*; 2, *Phillyrea latifolia*.—**H. K.** *Prunus pseudo-cerasus*, Waterer's variety.—**R. A. F., Bickley.** *Ornithogalum nutans*, common enough in gardens and nurseries, and as a naturalised wild plant in some districts; the bulbs are of little value.—**Land.** 1, *Anemone coronaria* var.; 2, *Ophrys insectifera*; 3, *Acacia falcata*; 4, *Euphorbia Esula*; 5, we do not know the Lichen.—**W. H. R. & S.** We are unable to name the *Rhododendron* from the specimens sent.

NEW VARIETY OF CUCUMBER: A. G. A very excellent fruit, possessing every desirable point; worthy of introduction to gardens, a good market variety.

PATENT TILE: J. W. T. We fail to trace the receipt of any such sketch as you mention.

PEACH AND NECTARINE LEAVES DEFORMED: Enquirer. The leaves are affected by a fungus, *Ascomyces deformans*. Remove every affected leaf, and burn it forthwith. The trees will then outgrow the attack as the weather improves. There is a figure of the fungus in the second volume of the *Gardeners' Chronicle* for 1887, p. 53.

PEACH SHOOTS DEAD AND DYING: W. S. The shoots are quite immature, and have not been pruned. One has lost every bud, including that at the point, and the other shoot has frost-canker, and is badly attacked by *Ascomyces deformans*, the fungus which causes "curl" of the leaf. You should cut off and burn every affected leaf, and then the tree may recover; but you must encourage growth, and train-in the young shoots thinly, so as to get them well ripened. Loss of buds, both floral and leaf, comes from the crowding of the shoots, as owing to the shade produced by the leaves they cannot develop fully or mature thoroughly. Another cause is lack of water at the roots, and trees on a south wall, as are yours, are very apt to suffer from this cause. You should afford the border, at the least, three copious applications of water in the period May to August, and one or two from January to March. When pruning, never leave a shoot of full length if it be not ripened up to the tip, but cut it back to triple buds situated on the well-matured portion.

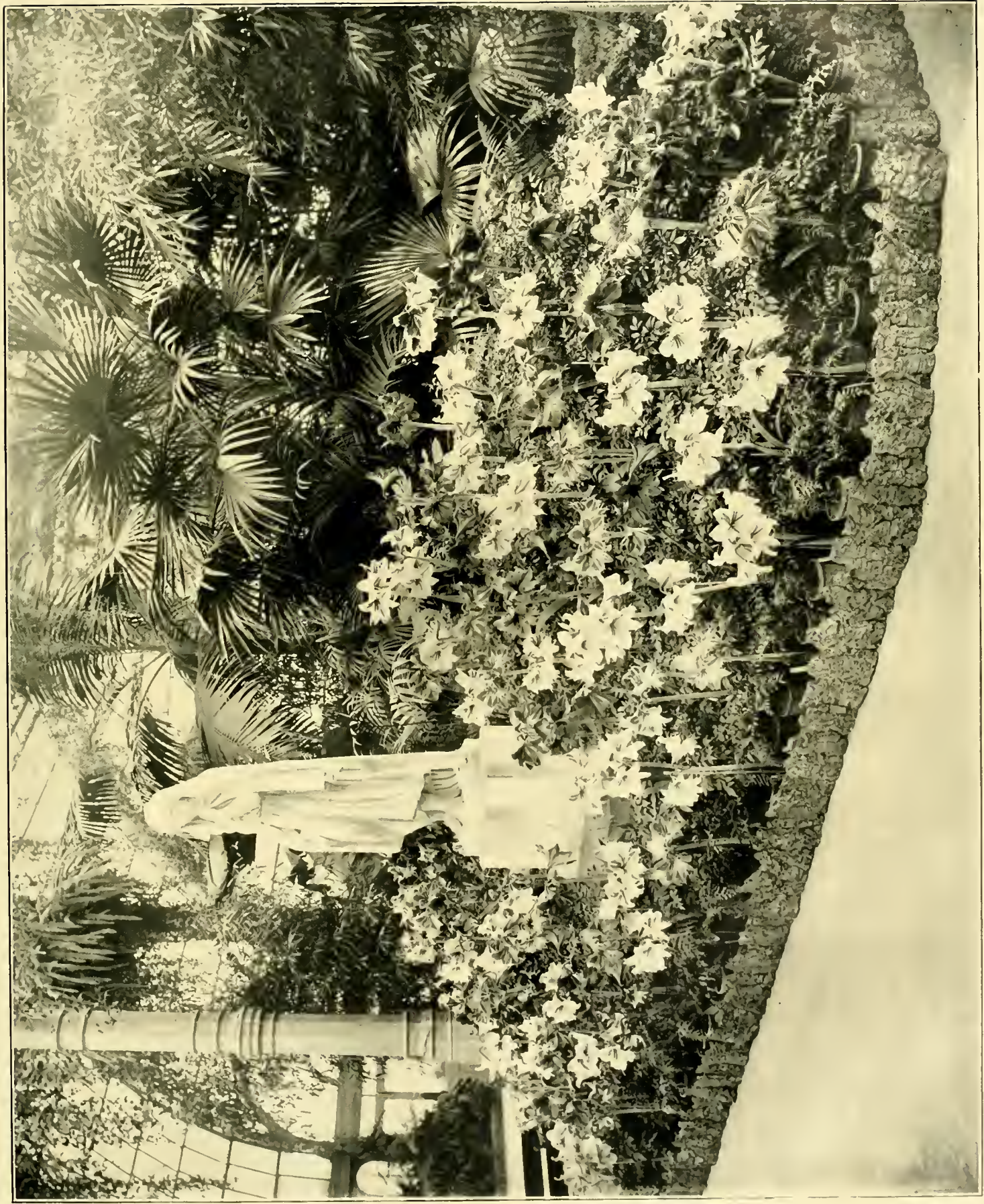
PEAR LEAVES: Mrs. A. The leaves are affected with the Pear-mite, *Phytoptus pyri*. Pick the leaves off and burn as far as possible; spray the tree with Bordeaux Mixture if it is really worth the trouble in your case.

PUNCTURED LEAF: M. T. D. The leaf sent is punctured by an aphid. Wash the plant with Quassia water, which you can make by boiling 4 to 6 oz. of chips of Quassia in 1 gallon of water; or use soapsuds made with soft-soap, or diluted tobacco water.

ROTTING POTATOS: P. J. P. The two Potatos sent are suffering from the same disease, although the manifestations are somewhat different. In one of these the exterior was covered on one side with convex, flesh-coloured tubercles, from the size of a large pin's head to that of a split Hemp-seed, sometimes arranged in a broken ring, mixed with tufts of a white mould. Internally the substance of the tuber was soft and decayed, nearly black beneath the pustules, mottled and brownish elsewhere. Examined under the microscope, the decayed parts exhibited a total destruction of the cells, except the starch, and the presence of a profuse uncoloured mycelium, mixed with spindle-shaped conidia. The external pustules are but a continuation of the internal mycelium, forming dense cushions of branched threads, producing at their tips a most profuse crop of fusiform, curved, triseptate conidia, the joints ultimately separating when matured. The other Potato exhibited no external pustules, but a soft, rotten blotch, which extended far into the interior, as a pulpy black mass of decayed tissue, mixed with a profuse mycelium, and developing the same curved, triseptate, spindle-shaped conidia. In both cases the fungus is the same, and is known as *Fusarium solani*, often alluded to in this Journal under the old name of *Fusisporium solani*. The only doubt which has been expressed concerning this mould has been whether it is a parasite, or only a saprophyte, but this doubt must now be set at rest, and the contention of Worthington G. Smith, that it is a destructive parasite, at once accepted (see *Dis. Field Crops*, p. 31), when he says, "The fungi found under *Fusisporium* are not generally considered to be capable of producing putrescence of tissues, but *F. solani* is an exceptional species." Sometimes all four joints of the conidia will germinate while still attached to the supporting threads, but at maturity the conidia fall into four pieces, and each segment will germinate at once. At first, the fallen segments are angular, but they speedily become rounded, and are capable of hibernating for weeks or months, and becoming what are virtually "resting spores," some of them possibly resting through the winter, and germinating in the spring. Manifestly, the only safe course is to burn all affected Potatos at once, so as to prevent the spread of the disease. The disease has been figured in the *Gardeners' Chronicle* under the name of *Fusisporium solani* (see figs. p. 656, vol. v., 1876, N.S.; and p. 56, vol. vi., 1876, N.S.). **M. C. C.**

SOIL ANALYSIS: E. H. Our duties connected with the editing of this Journal do not permit of us undertaking soil analysis. If you are a Fellow of the Royal Horticultural Society, however, you may obtain an analysis from the Society's chemist at a nominal charge. Address the Secretary, 117, Victoria Street, Westminster.

COMMUNICATIONS RECEIVED.—**J. G. B.**—**G. M.**—**Kelway & Sons**—**J. W. M.**—**J. P. King's Norton**—**J. H. Maiden**, Sydney—**T. Jannoch**—**R. Hedger Wallace**—**D. S. Fish**—**Barr & Sons**—**E. Mawley**—**F. Roemer**—**V. N. G. & Co.**—**Jas. Whitton**—**J. R. W. M.**—**A. O. W.**—**T. P.**—**Rev. C. W. D.**—**H. C.**—**E. J.**—**J. D. Pearson**—**J. O. B.**—**R. D.**—**H. G.**—**H. M.**—**W. P. B.**—**H. W. W.**—**J. B. J. S.**—**S. A.**—**J. Hoog**—**A. D.**—**J. J.**—**J. W. G. W.**—**DR. E. B. A. H.**—**J. M. Black**—**P. Barr**, Cape Town.—**C. D. M.**—**Bombay**—**J. Clayton**—**J. V. & Sons**—**W. H.**—**Warwick**.



GROUP OF PLANTS OF HIPPEASTRUM (AMARYLLIS) IN THE PALM HOUSE, SEFTON PARK, LIVERPOOL: PHOTOGRAPHED BY E. EDWARDS.



THE

Gardeners' Chronicle

No. 804.—SATURDAY, MAY 24, 1902.

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WILD FLOWERS IN THE GARDEN.

"FLOWERS worthy of Paradise, which not nice art

In beds and curious knots, but Nature born,
Poured forth profuse—"

was Milton's ideal garden. The lines rose to my mind as I read in this week's *Nature* a lament from an Italian writer over the servile monotony of gardens at the present day. An Englishman goes, he says, to an Italian garden, an Italian visits an English garden, hoping to see some representation of native Italian or English plants. In both he sees, at one season, nothing but Daffodils or Tulips; at another nothing but Roses or Pelargoniums, the fashionable flower of the period elbowing out the local flora. The criticism, true or untrue, sent me into my own little (Ebalian?) pleasure to examine how far a visitor from Italy, walking round it with me, would pronounce that here at any rate his countryman's indictment may be surrendered or maintained.

We should halt on entering before a luxuriant mass of lesser Periwinkle and large-flowered Tutsan, the former in perfection of foliage and bloom; amongst it spring Arum,

Grape Hyacinth, and the "Primrose Peerless" of our old writers, *Narcissus biflorus*. Beyond this is a patch of Fritillaries from the Isis meadows, edged with Wood Forget-me-Not. The large border is backed with tuberous Comfrey, just now in full white flower: in front of it are Lungwort, Alkanet, *Paeonia corallina* from the Bristol Channel, Globe-flower, Bitter Vetch, Gum-Cistus, showy *Lamium maculatum*. Round a tub filled with *Acorus calamus* and Bog-bean are Meadowrue, Water Aven, creeping Moneywort, and a cluster of moisture-loving Oxlips. A shady corner beneath a Weeping Elm lends itself on one side to the larger Ferns, interspersed with Primroses and lesser Celandine; on another to a tangled sylvan growth of Herb Robert, Campion, Mercury, annual and perennial Dog Violet. In a wet spot where nothing else succeeds are clumps of Marsh-Marigold (*Caltha palustris*), the "Horse Blos" of our northern rustics. Lilies of the Valley show the flower-buds which will be hidden as the leaves expand, and amongst them is the rare pink variety, sent to me by a benevolent stranger two years ago, who had seen my mention of it in these columns and happened to possess it. The native Geraniums have a bed to themselves: *G. Phœum* is in full bloom. *G. lucidum* showing amidst glossy foliage its specks of tiny pink, *G. pratense* and *G. sylvaticum* barely yet in bud. Kept also by themselves for show are a dozen plants of *Tulipa sylvestris* with tip-tilted petals, from an old Surrey garden where under trees it has long established itself. In a rockbed are *Asarum europæum*, hiding its liver-coloured bells under green kidney-shaped leaves; Cheddar Pink, sprung from seed long ago gathered on its native rocks; *Epimedium alpinum*, established, if not native in the north of England; with Wallflowers from the ruins of Valle Crucis and Abergavenny Castle. Next to these is a thick bed of *Claytonia perfoliata*, and amongst it peeping up blue mountain Pansy from Langdale. The pergola is a mass of opened Blue-bells, alternating with Foxglove ready to take up the colouring when these are gone. A few Anemones still remain, *A. nemorosa* mingled charmingly with its foreign cousin, *apennina*; a cluster of Snow-flake hangs its white, green-edged bells; tall *Onopordum*, Myrrh, *Smyrniolum*. Woolly-Thistle, Elecampane, Woad, Dane-wort, stand up side by side, and the ground between Currant-bushes is carpeted with Welsh Poppy, spreading self-sown year by year.

Of course there is much beside not native: Tulips, "feathered" and "flamed," Gesnerian and Parrot; the Gillyflowers, which Perdita despised, of every hue from pale yellow to blood-red; Honesty and Brompton Stocks. *Doronicums* of two kinds, *Staves-aker*, much mangled this year by the bitter February fortnight; the dazzling white of *Iberis coriaria*, *Aubrietia* and yellow *Alyssum*, unnumbered Pansies, *Violas*, *Polyanthus*, and *Auriculars*; the graceful Flame-flower, *Tiarella*, conspicuous weedy *Zizia aurea*, sturdy bronze-leaved *Megasea*, and a host besides not yet in bloom, promising later on to bring up the bright procession of the year.

My Italian leaves me satisfied: on the moral of our talk I build a plea for the inclusion in every garden of not a few among our neglected English native plants. I find

that strangers visiting my small demesne pause curious and arrested, not over conventional exotics, however gay and flourishing, but over the purple-veined blooms of Henbane, the brilliant blue of Chicory, the stately stems, woolly leaves, bright yellow panicles of *Verbascum pulverulentum*; over leafless *Vicia aphaca*, quaint Herb Paris, seed-scattering Touch-me-Not, legendary Virgin Mary's Thistle; over the two old cottage favourites now rarely seen—Devil-in-a-Bush and crimson Pheasant's Eye. Tenfold more nourishing than the visitor's pleasure in surveying, is the gardener's delight in acquiring them. They tell of many a ramble in meadow, forest, mountain, and moor; of a vasculum, which goes everywhere with its master, and, like the sword of Saul, returns not empty; of the cherished colonists multiplying year by year, assuming when wisely planted and tenderly nursed a size and beauty denied to them in their wild condition, consummating that final triumph of the Nature-lover by which homage to the floral realm is refined into friendship for the individual flower. To wild flowers again, not to exotics, belongs the allusive wealth of literature. The poets, in proportion to their mastery over our hearts, have sung of the simplest flowers; Homer and Sophocles of the Crocus, Chaucer of the Daisy, Milton of Rathe Primrose and the tufted Crowtoe, Wordsworth of the lesser Celandine, Shakespeare of Pansies and Violets, rank Kecksies, Fumiters, and Furrow-Weeds. Walk round a wild garden, and every plant you see is embroidered with poetical association; and lastly, *crede senescenti*, as the years pass over our heads it is to the wild flowers of unlearned childhood, not to the floral triumphs of critical maturity, that we turn for renovating refreshing memories. It was they who first breathed on us the magic of Nature, they who now appeal to us with revival of that early spell—

Earth's cultureless buds, to my heart ye were dear,

Ere the fever of passion or ague of fear

Had scathed my existence's bloom;

Once I welcome you more, in life's passionless stage,

With your vision of youth to revisit my age,

And to rear your loved heads on my tomb.

Corymbus senex.

NEW OR NOTEWORTHY PLANTS.

ARISTOLOCHIA PONTICA.*

This is a very fine perennial species received some years ago from the Caucasus; to speak more precisely, from the neighbourhood of Batoum, where it grows very vigorously in shady woods or grassy slopes and mountains. Boissier says that it occurs also near Rhizé, Ponti Lazici. The root-stock is globose, irregular, somewhat bulbous, and branched; stem erect or inclinate, and simple. Leaves very large after the flowering time, pubescent on the surface, ovate, and obtuse. The very large flowers (see fig. 113, p. 335) appear in my garden at Naples in the first half of April, and remain till the end of the month. The flowers are much curved, as large as a small Naples apple, greenish-purple or olive coloured, very variable, and somewhat bizarre; sometimes they are also yellowish, or pure purple coloured; their odour is powerful.

* ARISTOLOCHIA PONTICA, *Lam. Dict.*, i. 255, ex Boissier, *Flora Orientalis*, vol. iv. (1879), p. 1081.

The plant is in full vegetation from March to October, and in a dormant state during the rest of the year. It is a very fine perennial plant, worth cultivating not only in botanical gardens, but elsewhere, as it covers the ground so well under bushes and woods in our gardens or parks. It likes complete shade, and never does well elsewhere. I cultivate it in the open ground near a wall in the deepest shade, and have never disturbed it. The more it is let alone, the more it will propagate itself, and the flowers become better and larger. It likes the strongest loam covered with a deep layer of leaf-mould and peat mixed together. In pots it has not done well with me, but is quite a free flowering plant, which likes the shelter of a wood more than any other position. The flowers on my specimens have become larger from year to year. It appears that this fine species was never before imported alive into our gardens, but I believe that it will now become a favourite with amateurs. The root-stocks must be planted as soon as they come in, as they do not thrive if left dry a long time out of the soil. I have not yet seen the fruit or the seeds, but hope to gather some this present season, as my plant looks now very strong and healthy. *C. Sprenger, Naples.*

HERBACEOUS BORDER.

HARDY GERANIUMS.

It does not appear likely that the name of "Geranium," as erroneously applied to the zonal *Pelargonium*, will ever die out in our time; but I do not desire to speak of these popular flowers, except to say at the outset that my subject has nothing whatever to do with these Cape shrubs, but only with a few of the hardiest and best of the true European or Asiatic *Geraniums* or *Cranesbills*, at present in cultivation in our gardens. That it is not unnecessary to bring these before the notice of readers may be gathered from a study of the plants in common use for hardy flower borders in the average garden of to-day, even if better supplied than is usually the case with a varied collection of plants. Not that the *Geranium* is absolutely unrepresented, but it is seldom that one meets with more than one or two species in even large gardens, where these useful and effective flowers might be more often found. While one would not claim for the greater number of those most easily grown that they are among our choicest border flowers, we may assert with some degree of confidence that they are among the most floriferous of our garden plants, and are worth a place in a good border even at midsummer, when there is almost a plethora of good and effective plants in bloom. Some of those whose cultivation is more difficult are exceedingly beautiful, and give not only beauty, but interest to the garden in which they are grown. Who cannot, for instance, but admire a good plant of *Geranium argenteum*, with its satiny, silvery leaves, and its beautifully veined flowers?

Some of these *Geraniums* are among the most easily cultivated garden plants, their thick root-stocks making them almost indifferent to the droughts of summer, even if, as some of them are, naturally shade-loving plants. Indeed, with some one finds a difficulty in eradicating them when a strong seedling has once got a hold among other flowers where its presence is unwelcome. A great offender in this respect is our native *G. pratense*, a weed in some places, yet so pretty when in bloom as to be appreciated in quarters where it is unknown as a wilding.

GERANIUMS AS BORDER PLANTS.

Of what may be called the border *Geraniums*, it may be said that their cultivation is of the easiest. In any soil, if properly planted at first, they may be left alone for years, and will never fail to recompense the grower by masses of flower in the height of summer.

For the most of these the border is the most suitable place; but some are capital "wild-garden" plants, and a few may be planted on large rockwork, where they cannot smother smaller and choicer plants. The double form of *G. pratense*, for example, is not to be despised when grown so as to overhang the brow of a rock or to cover a low slope in the rock-garden.

Among the very best of these border species is *G. armenum*, which will grow from one to three feet high, according to the character of the soil, although it is a more manageable and prettier plant when it does not grow more than a foot or a foot-and-a-half in height, seeing that then it can do without support. It has great numbers of blood-red flowers sometimes quite an inch-and-a-half in diameter. It is a native of the Orient. Next to it for ease of cultivation and effect when in bloom one might almost put *G. ibericum*, a showy plant, growing a little over a foot high, and having showy blue flowers. This has been much longer in cultivation than the preceding, but is quite distinct in every way. *G. Endresii* is a distinct plant from these two, but is a pretty species with its light rose flowers marked with darker veins, and its palmate three or five-lobed leaves; it grows from a foot to a foot-and-a-half high. A pretty *Geranium*, but one not easily obtainable, is that named *gymnocaulon*, now considered only a Caucasian form of *ibericum*, which has a more slender habit than the preceding. *G. pratense*, a pretty native plant, is a species more to be valued, perhaps, in our gardens because of its forms. Of these, one may name the white one, which I do not so much care for; the double white, a rather scarce plant; and the double blue, whose button-like flowers are very pretty when looked into, because of their dove's-neck lustre. There are also a single form with pale lavender blooms, and one with soft rose flowers. Nothing can be more easily grown than these, though they grow to 3 feet or so high if held up by a stick, or they can be made to trail over a stone or bank if left unsupported. The Madeira *G. anemonifolium* is a pretty species which I have never ventured to try, inasmuch as it is rather tender, though classed by some with hardy flowers, and appearing in the *Kew Hand-list*. It will be safer for those who wish to try this scarce plant to protect it in winter. It grows about 1 foot high—sometimes, however, as much as 2 feet—and has handsome, finely cut leaves, and small purplish-red flowers. There is in cultivation under the name of *Lamberti* a hardy *Geranium*, growing about 2½ feet high, and having large lilac-blue flowers. The *Index Kewensis* refers this to *Grevilleanum*, with however a query attached; and while *Grevilleanum* appears in the hand-list, *Lamberti* does not. Another border species is *G. eriostemon*, which is about 1½ ft. high, and has blue flowers; *G. macrorhizon* grows about 1 foot high, and has red or rose-purple flowers; it is a good border flower. The native *G. sylvaticum* is not so often met with in gardens as its name, as one occasionally sees one or more of the forms of *pratense* grown under the name of *sylvaticum*. The pleasing *tuberosum*, which has purple flowers, and its form *Charlesii*, rose-coloured ones, has not proved hardy with

me where I have tried it, though it might do in a district with a lower rainfall. There are several other good border species, such as *atlanticum* (a little tender with me) and *Lowii*, which may be grown as well; but one wants to mention a few of those most suitable for the rock-garden, and I have already occupied too much space with the border species.

GERANIUMS IN THE ROCK GARDEN.

Although they may be grown in the border as well, yet I think the forms of our native *G. sanguineum*, the Bloody Cranesbill, are seen at their best on the rockery. The type is a beautiful plant, which grows in thousands on some of our shores, and a lovely sight it presents in June and July a mile or two from where the writer lives. Its deep crimson-purple flowers are very beautiful. An interesting plant, generally considered a form of this, though I still think it is a hybrid between *G. sanguineum* and *G. pratense*, is called *G. s. album*. It was found by Mr. W. D. Robinson-Douglas on the Kirkcudbrightshire coast a few years ago. There was only one plant to be seen. It has a much lighter and looser habit than the typical *G. sanguineum* as found on the same coast; the flowers are also of different form, and the leaves more deeply cut. Whatever its true parentage, it is a charming rockery plant, with its fragile-looking white flowers and elegant habit. It is even freer-growing than the type here, and increases more rapidly at the root; it reproduces itself true from seed. *G. s. lancastriense*, from Walney Island, is another charming plant, with a close habit and pretty flowers of a soft pink veined with rose. It also reproduces itself true from seed, and is a beautiful rockery flower.

A charming little hardy *Geranium* is *G. cinereum*, a Pyrenean species, much of whose beauty consists in the glaucous colour of the pubescence which covers its foliage, which is finely divided, although its small, pale red flowers, with dark stripes, are not to be despised; it likes a rather drier soil than some of the others—although they do not object to drought much—but should have its roots between stones.

Perhaps, however, the greatest gem of the genus is given by *G. argenteum*, a lovely plant, either in leaf or in flower. It has prettily-formed, almost radical leaves, beautifully silky in their appearance, and so white as to be sufficient warrant for giving the plant its specific name. The flowers are large, and of a pale red, with darker veins. For either its leaves or its flowers this species is to be prized. Its only drawback is that it is liable to suffer in winter from excess of rain or sleet, and that it thus ought to have a little shelter from these, either in the shape of a sheet of glass or an overhanging rock or stone. It is otherwise quite hardy, and likes to be in the crevices of rockwork.

The last I shall mention at present is *G. Wallichianum*, of which there are some three forms in cultivation, although I think the tallest has no claim to the name. It is about a foot in height, and has blue flowers; it seems to correspond with one I once grew as *G. nepalense*. There are, however, two dwarf plants, which grow only about six inches high, and which seem both to be entitled to be called *Wallichianum*. That commonly met with has pretty blue flowers with a tinge of purple about them, and is not so much admired as the other, which is known as Mr. Buxton's variety. It is, however, an easier plant to grow, and seems to be more easily increased by division or by cuttings than Mr. Buxton's plant. The latter is an exquisite thing;

varies in colour from its first appearing in bloom, and with me comes bluer early in the season than later. It flowers for a considerable length of time, and the later flowers have more of a rosy hue than the earlier. Although it grows only about six inches high, it forms a spreading mass, in some gardens two or three feet across. It is best increased from seed, and the seedlings appear to come true from all I can learn from the few who have raised them.

in June or July, and I did not desire to overburden these remarks with too much detail. One would, however, plead for a more general recognition of the claims of these useful, easily grown plants, whose usefulness might even be increased were some one with leisure to take up their improvement, either by hybridising the most promising species, or simply by seedling raising. They might well repay some pains in these directions. *S. Arnott, Carsethorn, by Dumfries, N.B.*

were sown on March 12, and the pods were ready for picking about April 20, and the crop is an excellent one. The bine would have exceeded 6 ft. in height had it been allowed to do so, but I was obliged to limit it to 4½ feet. The bine is short-jointed, and at each joint there are four, five, and in some cases six pods. Two, and in some cases three side shoots have been made, which grew as high as the main stem, and were quite as fruitful. Runner French Beans take up but little space, and the

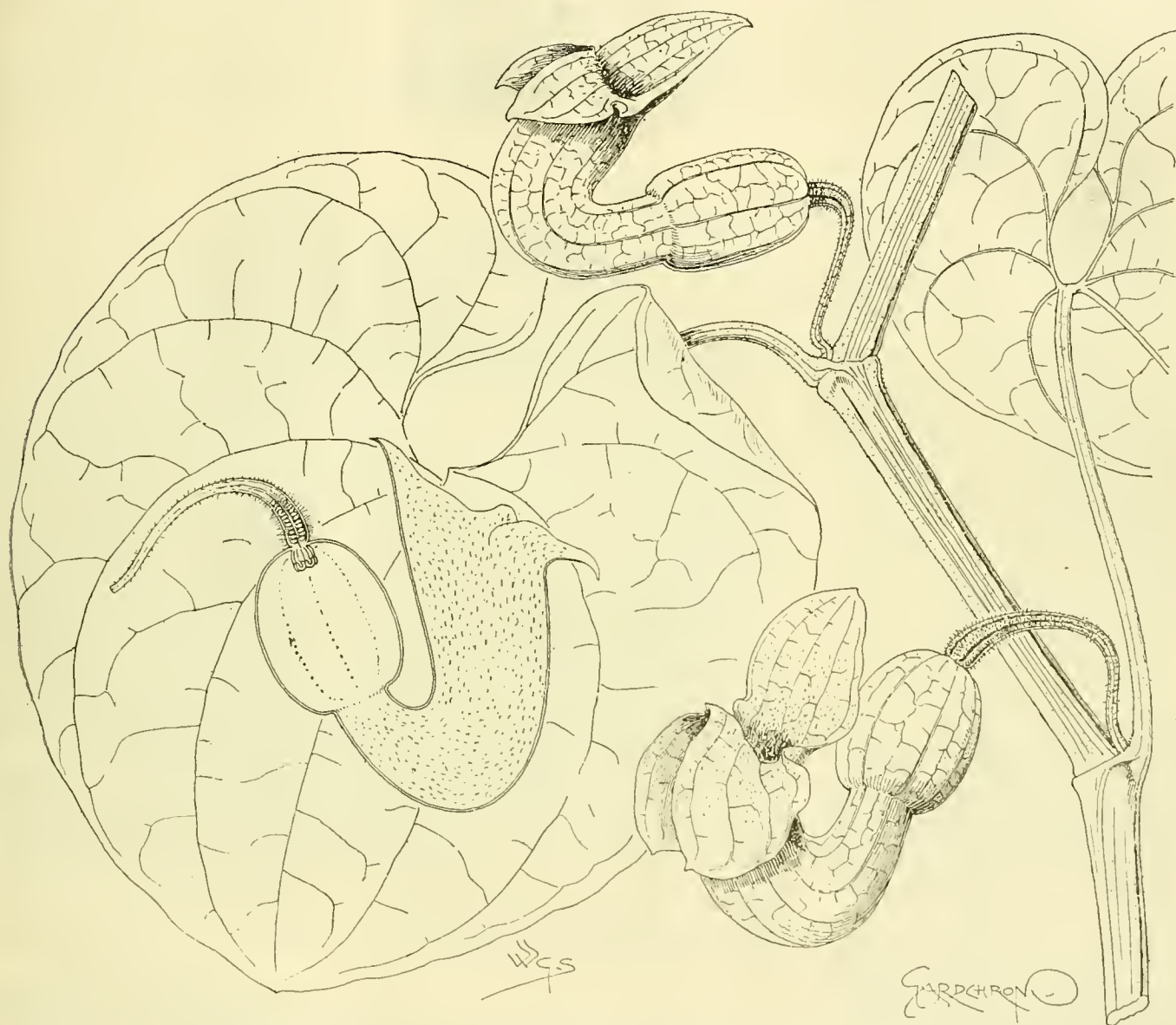


FIG. 113.—ARISTOLOCHIA PONTICA: FLOWERS GREENISH-PURPLE, FOETID. (SEE P. 333.)

Generally speaking, these Geraniums may be increased freely by means of division, seeds, or cuttings, but a few, such as *G. argenteum*, are not easily divided, so that cuttings or seeds form the best means of propagation. Seedlings of the various species are generally very satisfactory, and it seems a noteworthy thing in the genus that there is so little variation among the seedlings from the colour point of view. Possibly the hardy Geranium would be more popular were there more variety.

It will be remarked that I have said little about the flowering period of the respective plants. This is because they are almost all summer bloomers, generally coming into flower

VEGETABLES.

FRENCH BEANS FOR FORCING.

I THINK I may say that, in my opinion, the best French Bean is Sutton's Forcing. This year I sowed the seed on February 12, and six weeks from that date I picked the first dish of pods. It is the first time that I have grown this variety, and in consideration of the short space of time required to produce pods, and the abundance of the crop, as well as the general excellence, it is the best variety I have hitherto grown.

This season I also tried Tender-and-True, a runner variety of French Bean, with results exceeding my expectations. The seeds

plants come into bearing as soon as the dwarf varieties.

Where glass-house accommodation is limited, a house 18 feet long and 12 feet wide, with beds about 3 feet 9 inches on either side of the path, and the heating arrangements sufficient, a succession of crops could be obtained by growing Dwarf and Runner French Beans alternately, and still find space to grow Lily of the Valley and other plants which require or are not spoiled by a little shade. Last November I sowed Runner French Beans in boxes, so that the plants should be ready as soon as the Cucumber plants were cleared out, and I had some well-rotted stable-manure mixed with the soil of the Cucumber-bed, and the

Beans planted at 4 inches apart, and later the bine was trained up the wires. A fortnight later seeds of Dwarf French Beans were sown and placed on the shelves in the house. In this manner I have been enabled to keep up a supply of Beans since the first week in December. As a manure I use the native guano. *J. S., Sussex.*

NOTES ON BROCCOLI.

The Broccoli season now ending has not been a favourable one in this district. In most years the crop is an uncertain one here, which may be due in a measure to the river Avon, which runs close by the lower part of the kitchen garden at Stoneleigh. We experience very severe frosts throughout the winter, and worse than this they occur early in autumn and very late in spring. We cannot succeed at all with Snow's Winter White, unless we lift and store the plants in pits or frames, or afford them some other kind of protection some time before they show the curd. In most years Self Protecting and Leamington have afforded some really good heads, but they have come into use in a very erratic manner this year, and are much under-sized. The old Cattell's Eclipse is still difficult to beat for hardiness, but they too have turned in before they should have done. Model appears to be hardy, and the heads are well protected, but they are not large, in spite of the plants appearing healthy and strong. There is little doubt that the best Broccoli are produced by plants growing in a loamy, retentive soil; whereas ours is an old garden, and the soil contains a large quantity of humus. Our best Broccolis this year have been those late ones last mentioned, and they were planted with an iron bar on a worn-out and very hard Strawberry-bed, the plants of which were destroyed after fruiting last summer, and the Broccoli plants inserted without any preparation whatever, merely puddling them in with water. *H. T. Martin, Stoneleigh Abbey Gardens, Kenilworth.*

THE LAWN - MOWER.

(Continued from p. 322.)

ITS CONSTRUCTION AND MANAGEMENT.—Returning now to the roller patterns, and speaking collectively, it is necessary to explain the parts with their uses, noting the peculiarities of different builders as far as possible. This will perhaps be somewhat tedious, but it is important to have a thorough understanding of the manner in which a mowing machine is put together.

THE ROLLER.

In nearly all, if not quite all, English-made mowers for any machine under about 12 inches wide, the roller is in one piece. Over this size, however, the roller is divided, the object of course being to prevent tearing up the grass in making short turns. In a few of the older machines of small size the roller is fixed to the axle, and consequently the cutters revolve whether the machine is drawn backwards or pushed forwards. This however is a bad practice, and causes unnecessary wear of parts; by far the best plan is the device generally adopted, and shown in fig. 114.

Here it will be seen that the roller or rollers revolve loosely on the shaft or axle, and to the axle itself two small wheels, with teeth shaped like the teeth of a saw, and technically termed ratchet-wheels, are firmly secured. Now it will be noticed inside each roller there is a projection, *a*, with a slit or notch in it, and fitting into this is a curved piece of iron, *b*, which rests on the teeth of the ratchet-wheel. This piece is technically termed a "pawl," and to this a second piece, *c*, is hinged. This piece, *c*, is flat, and has a hole, or rather is

made with a ring, through which the axle passes, and consequently swings loosely on it. One end presses against the back of the pawl, *b*, and the other end is weighted to keep it in its place.

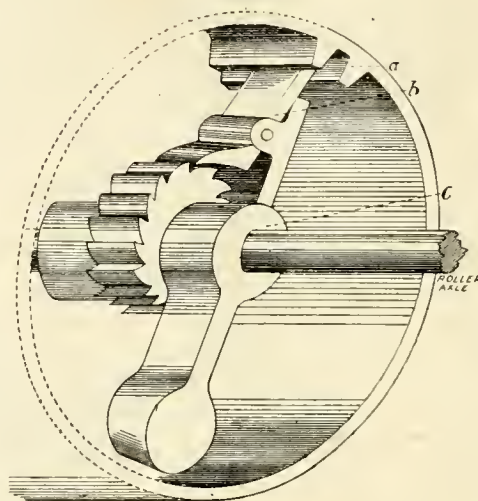


FIG. 114.—ARRANGEMENT EMPLOYED ON ROLLER-TYPE MACHINES, TO PERMIT THE MACHINE TO TURN CORNERS, AND TO BE DRAWN BACKWARDS.

(The roller is shown partly dotted for clearness.)

Now, when the machine is pushed forward, the rollers carry both these pieces with them by means of the notches *a*, and consequently the pawl *b* jams in the teeth of the ratchet-wheel, and carries round the axle with the cog-wheels fixed thereon. When the machine, however, is drawn backward, the motion of the roller lifts the pawl *b* out of the teeth of the ratchet-wheel, and by this means, and also by the shape of the teeth, it slips over them without moving the axle.

The action of this device when the machine is at work is as follows:—Supposing the operator to be in the act of making a sharp turn, the outer roller must necessarily travel faster than the inner one having more ground to cover, consequently the outer roller drives the axle, and of course with it the ratchet-wheel belonging to the inner roller. This roller as it is moving slower than the other, therefore allows the teeth of its ratchet-wheel to slip over the pawl *b*. This device will be found on all of Messrs. Green's mowers of medium and large size; on Ransomes'; and on those of many other makers. Messrs. Green,

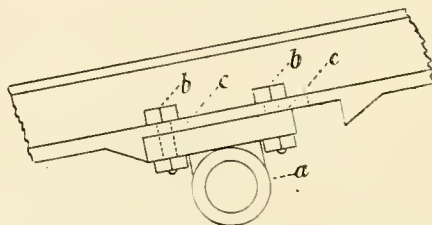


FIG. 115.—PRINCIPLE OF ADJUSTMENT EMPLOYED ON CHAIN-DRIVEN LAWN-MOWERS.

a, Roller axle-bearing.
b, *b*, Bolts (shown partly dotted).
c, *c*, Slots in machine-frame (dotted).

however, prefer on their larger machines to operate this device by hand, and therefore on these mowers a handle placed just below the usual handles is provided, fitting into two notches in an iron support just in front of

them. The ratchet-wheels are similar, but their teeth are on the side, and they are in two halves which fit together. One half of the wheel is fixed to the roller, the other half is placed on the axle, but in such a way that it is free to slide endwise. These sliding halves are worked by the handles before spoken of, and thus when the person using the machine makes a sharp turn, he throws the handle on the inner side of the machine into the inner notch, which allows the inner roller therefore to run loose on the axle. When going straight forward both handles should be in the outer notches, and therefore both rollers are fixed to the axle.

The arrangement first spoken of should be kept clean, and afforded oil from time to time. The second device should also be kept clean, and the sliding parts and joints of the handles oiled, but in this case it does not matter about oiling the ratchet wheels, as sufficient oil will find its way on to them from the rollers, and their teeth are not really called on to bear any strain, but only to lock the axle and rollers together. Properly, these wheels are termed clutches, and the arrangement is spoken of as a "ratchet-clutch."

The arrangement of this part in the "side-wheel" machines is very different, for naturally the cog-wheels being all in one piece with the rollers, the ratchet must be placed somewhere else, and therefore in these machines it is combined with the pinion *d* (see fig. 107, p. 321, ante). These pinions are each fitted with the device shown in fig. 108, p. 321, ante, by referring to which it will be seen that inside each a ratchet is formed, being, so to speak, like an ordinary ratchet-wheel as shown in fig. 108, p. 321, ante, with the roller machines, turned inwards. There is a hole or slot through the end of the cutter spindle, through which the catch or "pawl," *c*, passes loosely; and it will be noticed this "pawl" is not long enough to reach from one side of the ratchet to the other—consequently, when the machine is pushed forward, the "pawl" catches the edge of the ratchet and drives the cutter, but when the wheels turn the other way, the catch falls back and slips over the teeth without moving them.

This arrangement is fitted by Messrs. Chadburn & Coldwell to all their machines, including the "Excelsior," before mentioned. The smooth-wheel driving machines, as has been before explained, do not require a device of this nature, as by the movement of the intermediate wheel *c*, in slipping upwards when the machine is drawn backwards, it is not necessary (see fig. 103, p. 320, ante).

THE USES OF WHEELS.

We now come to a very important portion of the lawn-mower, viz., the arrangement of wheels, whatever they may be, which carry the power from the roller to the cutter. Here there is much to call for attentive study, and too much care cannot be bestowed on this question, for the satisfactory making of the mower depends entirely on the correct design and proper maintenance of this very important part of the machine.

To commence with the oldest arrangement, cog-wheels, it will be noticed that except in the "side-wheel" machines there are four wheels, two large ones and two small, these last technically termed "pinions." The description of a cog-wheel is according to what part of the wheel the teeth are placed, and, as in a mower, only one class of wheel is used, that kind where the teeth are placed on the edge; it will perhaps be as well if they are called by their technical title, viz., "spur" wheels. One of the largest of these is fixed to the roller axle; this drives a small one (or

pinion) fixed to a shaft which runs sometimes entirely across the machine, and has fixed to its outer end the second large wheel which in turn drives the second pinion fixed on the end of the cutter spindle. In some small and medium sized machines, the first pinion and the second large wheel are cast together, and run loose on a short axle or stud instead of being fixed to a long axle or shaft as first described. This is not quite so strong, as the strain comes entirely on one side of the machine, but it is much more compact, and dispenses with one extra bearing and oiling place. This kind of gearing is very strong, and if properly made and kept in order it is second to none, but is not quite so easy in working as the next type of gearing to be described.

With regard to the next class of gearing, that in which a chain is used: this is perhaps

and to be sure of tightening the bolts holding them afterwards.

In the larger mowers a chain on each side of the machine, with of course another pair of wheels, is employed. This gives a strong drive, and the strain on the machine is more equal, but it is sometimes a little troublesome through one chain stretching more than another. This, however, owing to the great improvements in the manufacture of driving-chains, seldom if ever occurs with modern machines, though sometimes the older ones give trouble in this respect.

Considering the many advantages of the chain on the score of lightness and easy running, it is a pity that it has one rather serious drawback. This is, that as the size of the large chain-wheel is limited by the size of the roller, the cutter cannot be driven so fast

placed on the top of a round piece of wood held in a vice or driven into the ground, the top of this piece must be just large enough for the ring *c* to fit nicely without turning round, and when it is held in this way the band must be put on the ring *c*, and with a screw-driver, or similar tool, must be gently stretched over its edge until it falls into its place. Great care should be taken that no oil or grease come into contact with the band, as this rapidly eats it away.

These machines are even more silent than the chain-driven mowers, but are not quite so easy in running. *Sydney Russell.*

(To be continued.)

SHORTIA UNIFLORA.

WE are indebted to the courtesy of Mr. W. T. Hindmarsh, of Alnbank, Alnwick, for the opportunity of figuring this pretty rock plant, and for the following remarks concerning it:—

"The accompanying illustration (fig. 116) is from a photo taken on my rockery on April 3 in this year of a plant of *Shortia uniflora*, the Japanese variety of *Shortia*, and excellent as is the photograph, I question if any can adequately reproduce the beauty of the plant. There were twenty-four blooms (all expanded) of a lovely waxy white, or rather pale blush colour, slightly flushed on the back of the petals with rose, which faded as the flower increased in age. The photographer has managed to include about seventeen flowers, the others being on the opposite side of the plant towards the rock behind, which it does not touch, though this is rather suggested in the photograph, which I may say is about one-third natural size, the blooms being about $1\frac{1}{2}$ inch in diameter, and the foliage very robust; and not so much tinged with red as I have often noticed in *Shortias*.

"*S. uniflora* is, in my opinion, very superior to the North Carolina form, *S. galacifolia* (see *Bot. Mag.*, t. 7082), and indeed is one of the most beautiful rock plants it has been my good fortune to succeed with. I have another plant of *S. uniflora* which has not thriven so well, only having eight blooms, and it differs much in colour, being of a charming bright rose tint. Both plants I procured as very small specimens a little over four years ago, since when they have been on my rockery without protection, and the results of varied treatment is very marked.

"The subject of the illustration has grown in peat in a pocket on the rockery, facing due south; whilst the other plant was on the opposite side, i.e. with a north aspect, and was planted in a mixture of loam and peat, which does not appear to suit its tastes nearly so well. I cannot find that *S. uniflora* has hitherto been figured in the horticultural press; indeed, it seems to have been scarcely alluded to, and to be at present a very rare plant in this country."

PRIMULA SIEBOLDI.

A COLLECTION of charming varieties of this species may be found at the Royal Nursery, Slough. The collection, which comprises about twenty-five varieties, occupies a cold frame of some three lights. A few appear to be shy in producing flowers, but that is probably owing to some condition of plant and soil, for having grown a collection several years ago, it is difficult to say aught else but that all the varieties when well attended to bloom freely. One reason for the neglect of *P. Sieboldi* is, that its period of flower is like that of the *Auricula* and the *Polyanthus*, somewhat restricted in point of time. *P. obconica*, *P. si-*



FIG. 116.—SHORTIA UNIFLORA: FLOWERS OF A PALE BLUSH TINT, AND OF WAXY APPEARANCE.

the simplest of all. If the reader will imagine he is looking at a bicycle chain and wheels, and that the large wheel is fixed to the roller axle with the small one on the cutter spindle, he will have a perfect idea of the arrangement.

Notwithstanding all modern devices both of English and American origin at present on the market, this simple and very practical device as first introduced by Messrs. Green, still retains its place as one of the best means of driving, and almost every English maker using spur wheels finds it pays to make a chain driven machine in addition to their own pattern.

A chain-driven mower should be carefully used, as when the chain becomes loose it will fly off and is difficult to replace. The general method of tightening the chain is shown by fig. 115, where it will be seen that the roller axle bearings are provided with long holes or slots, and by loosening the bolts the axle can be drawn back, thus tightening the chain. Care should be taken to move both sides equally,

as in the spur-gearred machines, where another set of wheels as described is used to get up the speed. On the other hand, the advocates of the chain-mower urge that the wheels and oiling places are dispensed with, and the cutters can have more blades to compensate for their lower speed. Both plans have their advantages and supporters. "When doctors differ, who shall decide?" It is really a point for individual circumstances, and must be dealt with under the hints to purchasers at the close of this article.

With regard to the next class of driving arrangements, that where smooth wheels are employed, the writer is only aware of one maker using this, viz., Messrs. Barnard. The device is illustrated in fig. 106, p. 321, *ante*, and the only part requiring attention is the rubber band on the wheel, *c*, which requires renewing from time to time; but with fair usage these bands will last several years.

According to the makers, to put on a fresh band, the wheel, or rather the ring, *c*, must be

nensis, *P. floribunda*, not to mention others, are successional bloomers. Not so the form under notice: it yields up its floral beauty at one supreme effort, but there is a great winsomeness about it while it lasts, and there is also a good range of colours, from pure white to crimson and purple through several shades; and then the form of the flowers varies—the corollas of some varieties lie out quite flat and erect, in other cases the petals curve inwards, and they droop. Some have smooth, rounded petal edges, others are much laciniated; and so different tastes are appealed to. There is certainly a peculiar fascination about a mass of *P. Sieboldi* when in the height of its floral beauty.

Sometimes *P. Sieboldi* fails from improper cultivation. It is probable that when the plants are out of flower they are put aside and neglected. The plants mature their growth after flowering, and that is the critical time. It suffices to place them in a frame in a cool, shady spot, and to attend to their needs regularly in the matter of applying water and frequently sprinkling the foliage, so as to prevent red-spider from infesting it. There is reason to suppose that many are lost by the creeping, rhizomatous stems being allowed to become quite dry during the winter. Though the roots are at rest, the soil about them should be kept just sufficiently moist to preserve their vitality. It is a perfectly hardy plant, and yet it is well to protect the roots which are in pots from hard frost.

In February signs of growth become noticeable, and then is the time the roots should be re-potted, and though they root freely, it is well not to over-pot them. Some loam, leaf-soil, well decomposed manure, and road-grit, form a suitable potting compost. After repotting, place them in a frame and keep close for a few days.

The leading varieties in the Slough collection are:—

Alba magnifica.—White, the petals much fringed and somewhat pendent.

Arthur.—Deep rosy-pink, a smooth edged variety of excellent form.

Beauty of Sale.—White, shaded with rose, of good form, and very pleasing.

Fairy Queen.—Free blooming, white, with fringed petals.

Gem.—Deep reddish-lilac, excellent in form, and one of the best.

Harry.—A very free-flowering variety, crimson, with white streaks.

Harry Leigh.—Lilac-purple shaded, one of the best formed of the batch, and excellent for pot-culture.

Leo H. Grindon.—Deep rose, white centre.

Miss Kelly.—Pale rose—an attractive colour.

Mrs. Crossland.—Highly floriferous, pale pinkish-rose.

Miss Nellie Sandback.—Deep rose, the petals much fringed.

Mrs. Ryder.—One of the best. Greyish-white, the reverse of the petals rose.

Polly.—Pale rose, large flowers, produced in bold trusses.

Queen of Whites.—A finely-formed white, the flowers of good substance.

Ruby Gem.—Bright rosy-pink; very fine and distinct.

Victor.—The deepest coloured of the set, being of a bright rosy-crimson tint, is of good form and substance, and very free. *R. D.*

The Week's Work.

FRUITS UNDER GLASS.

By JAMES WHITTOCK, Gardener to the DUKE OF BUCCLEUCH, Dalkeith, Scotland.

Orchard House.—Trees of the Pear, Plum, Peach, and Nectarine, growing in pots, should be examined as to the state of the soil twice daily, affording water as soon as it is seen

that the soil is getting dry. A rim of zinc 3 inches broad may be put within the rim of the pot, which will afford space for a top-dressing of fresh turfy loam, mixed with bone-meal. Diluted cowshed drainage may be frequently applied, as the roots being restricted to heavily cropped trees, pots require much feeding if fine fruits are desired. The pots may be plunged in materials from which the water will escape freely. The best varieties of Pears which cannot be grown outdoors in parts of the country which do not enjoy much warmth, can be grown in cool orchard-houses with thorough success, if planted out as trained cordons, and be afforded surface dressings of artificial manure, as well as manure-water. An orchard-house should stand fully exposed to the sun all day long, and should be well ventilated night and day. Pears and Plums should have the young shoots pinched so as to form spurs, but Peaches and Nectarines not fruiting generally on spurs should have the best shoots retained at full length, and gross shoots cut back to the first, and sometimes to the last or lowest sublateral; never cutting them to a dormant bud, as that would be running the risk of causing every bud to become a shoot, thus spoiling the shoot as a fruit-bearer next year.

Forced Strawberries.—If there are sufficient pot plants to keep up the supply of fruit till the outdoor plants come into bearing, those not yet started should be stood at the foot of a wall facing north, or in some place where the sun will not reach them, in order to prevent the flowers expanding. Let sufficient water be applied to all plants in pots, and before taking any of them into the forcing-houses clean the pots, slightly prick up the surface of the soil and afford each a top-dressing of plant-food. The plants are usually stood on shelves, and the soil dries quickly in such places; put under each, therefore, a saucer or a strip of turf sprinkled with artificial manure. Attend to the plants twice daily. Syringe the plants night and morning, and afford manure-water often until the first fruits colour; then keep a dry, buoyant air in the house so as to impart high flavour to the fruits. Scarlet Queen, Leader, and President are good varieties to grow at this season in light soil, whereas Royal Sovereign after this date will only do well in a good, heavy kind of loam. Plant out after due hardening those plants which have been forced, they will afford a good crop next year, after which destroy them.

Earliest planted Fig-house.—The air of the house where fruits are ripening should be kept drier than hitherto, but as the second crop is showing abundantly, and is of equal importance, do not let the air become so dry as to incur the danger of a spread of red-spider. The roots being in borders of very limited size, and the soil porous, with plenty of roots on the surface, they must be well supplied with plant-food and abundance of water.

THE ORCHID HOUSES.

By W. P. BOUND, Gardener to J. COLMAN, Esq., Gatton Park, Reigate.

Epidendrum vitellinum.—The autumn-flowering variety of this species now fast developing its growth, should be afforded a position in the intermediate-house, where strong light will reach the plants. Repot them should this be necessary, using equal parts of turfy peat and chopped sphagnum. The plant is a desirable addition to the intermediate-house collection in the autumn months, and few Orchids will better stand fog. The blossoms are suitable for button-holes. Whilst growth is being made, water should be applied to the roots as often as necessary, and the house well ventilated. Failure is often caused by keeping a stuffy atmosphere.

Lycastes.—*L. Skinneri* and its varieties, *L. Deppei* and *L. aromatica*, are now beginning to grow, and repotting may be carried out if necessary. The best kind of compost for this species is one that consists of good turfy loam two-thirds, leaf-mould one-third, and

some coarse sand, as well as small crocks, the whole being mixed together. A fair amount of drainage should be afforded, and the compost kept rather below the rim of the pot, and put together firmly. Place the plants in the coolest part of an intermediate-house, and where plenty of light will reach them, but shade from strong sunshine. Apply water in moderation till the growths get somewhat advanced, but when growing afford it freely at the roots and overhead.

Bifrenaria Harrisoniae (syn. *Lycaste Harrisoniae*).—This beautiful species having passed out of flower and begun to grow, repotting may be carried out with such plants as stand in need of it, making use of a compost consisting of one-half good turfy peat and one-quarter each of chopped sphagnum and good leaf-mould. This plant succeeds better if the Fern rhizomes taken out of the peat are employed as the drainage materials. Afford the plants a light position in the intermediate-house, and shade them from strong sunshine during the mid-day hours in the summer months. During growth, water may be freely applied at the root, and overhead sprayings in sunny weather.

Seasonable Hints.—Most *Dendrobiums* should be making growth and roots, and the plants will require more water than heretofore; but the cultivator must be discriminating between plants that are growing vigorously and those which are weak. Overhead syringing on bright days has a beneficial effect at this stage, and the admission of the early morning and late afternoon sun to the quarters occupied by these plants will tend to give firmness to the new growth, enabling it the better to withstand unfavourable weather. The natural heat obtained in this manner favours strong and healthy growth.

Dendrobium Cuttings.—Many of the cuttings that were prepared in the early part of the month of March will now be making growth, and they should be potted forthwith in the mixture advised in the Calendar for March 15, and placed in a hot, moist, and well-shaded house, or in a propagating-case, so as to cause quick growth, and to obtain from the earlier cuttings a second pseudo-bulb in the present season.

THE KITCHEN GARDEN.

By T. TURTON, Gr. to J. K. D. WINGFIELD DIGBY, Esq., Sherborne Castle, Dorsetshire.

Carrots.—As soon after rain as the ground dries, sow the main crop of Carrots in drills drawn at 15 inches apart. To ensure a proper braird of the plants, the seed should be mixed with damp sand and rubbed between the palms of the hands to separate the seeds, these being apt to adhere together. If the soil should get dry before germination has taken place, apply water to the drills late in the afternoon, continuing the practice if rendered necessary by dry weather till the plants are large enough to admit of the Dutch-hoe being used between the lines. This aeration of the soil will aid the growth, and plants will soon be large enough to shade the ground. As mentioned in a former Calendar, where wireworm abounds, the drills should be filled in with charred garden-refuse three parts, and soot one part. Although the earliest crop of Horn Carrots do not require to be thinned much, because they are usually consumed whilst of a small size, in the case of the crops sown now thinning is called for, more especially if the seed was good, and it was sown rather thickly.

Broad Beans.—Make the last sowing, and if possible, on a wide border facing north. If the soil is of a heavy nature, the rows may stand 4 feet apart, as in such land the plants will grow to a large size; but in less retentive or poorer soil 3 feet apart will be sufficient. Sow in broad drills, say of from 7 to 9 inches wide, two rows of Beans at 1 foot apart. Broad Windsor and Green Windsor are the best varieties for sowing at this part of the season, the pods filling better than the Longpods.

Peas.—A plentiful sowing should be made of varieties that are known to succeed in the district, and the last sowing of the season, consisting of the same varieties, should be done in the middle of June. These will afford Peas for the table from August till the end of October. For such sowings I select a piece of ground which is not likely to be required for any other crop before the spring. Any of the following Peas may be sown:—Veitch's Autocrat, Sutton's Late Queen, Sutton's Latest-of-All, and Walker's Perpetual Bearer, varieties of moderate height convenient for netting over, and some sort of protection against sparrows and crossbills is necessary in most gardens. If the surface of the soil is apt to cake under sunshine, a mulching of spent Mushroom-bed dung passed through a three-quarter-inch sieve, or some decayed leaf-mould spread over the lines, will serve to keep the soil moist, and be better for the Peas when they come through the soil. If rows of early Peas have not as yet been mulched, see that it is carried out forthwith, and so economise labour in affording water. Fresh stable-dung may be prepared for mulching purposes by being thrown into heaps to ferment, and be turned twice or thrice until all the grain that may be in the straw has germinated or been destroyed, otherwise much expenditure of labour is caused by having to pull up the Oat-plants.

Savoy.—Make a sowing of Early Dwarf Elm, to follow early Peas, and as a succession sow at the same time Sutton's Perfection, which is a compact-growing, useful variety.

Parsley.—Make the main sowing, and plant the thinnings to stand the winter, which they do better than the untransplanted plants, owing to the check given by removal. A border facing east suits summer and early spring sowings. When making the sowing arrange the rows, which may be about 15 inches apart to suit the width of garden-frames that may be used to protect the plants in the winter. Skeleton frames may be made use of if garden-frames are not available, the former being constructed of 1-inch boards.

Willoof.—Sow this forthwith and in quantity, according to the demand. Where the space can be spared, the ground set apart for the general root crops will suit it well. Not, however, being particular as to soil, it may be grown in any part of the garden. Sow in drills at 15 inches apart.

Earthing-up Potatoes.—This operation should be diligently carried out as fast as the tops are sufficiently tall, and then there is little risk of damaging the runners. When the tops are 6 ins. high, this height may be taken as a standard for all varieties, although the roots of some of the early Potatoes are active before the haulm is even of this height. In all kinds of soils, except those which are very light, I prefer to do the work with a flat tined digging-fork, as the fork breaks up the ground and leaves it in a better condition for the growth of the tubers.

PLANTS UNDER GLASS.

By J. C. TALLACK, Gardener to E. MILLER MUNDY, Esq., Shipley Hall, Derby.

Chrysanthemums.—Up to the time of writing it has been unsafe to put anything of a tender nature outdoors, no matter how well hardened, but given warmer weather, the Chrysanthemums must be stood out in a sunny and open spot without delay. There will still be a few varieties to "stop," so as to time their flowers properly, but published tables will give the key to this matter better than space would permit of my doing in this article. A few weeks will bring us to the time when the plants must be transferred to their flowering-pots, and in order to further this operation, the compost should be got in readiness forthwith, more especially where artificial or concentrated manures are to be mixed with the soil, as the time which intervenes will help to tone down the crudeness of some of these manures. The main thing needed is a good supply of turfy loam which has become mellow from storage; sand, too, is a requisite, and for the

rest it is safe to apply a small quantity of horse-droppings rubbed through a fine sieve, and broken oyster-shells or bone-meal. The one thing to avoid is an over supply of manure in any form, as it can be readily afforded by means of the watering-pot later on.

Begonias.—Young stock of tuberous and other Begonias may be potted in a compost enriched with decayed cow-manure, and kept open by the free use of sand. Nearly all kinds of Begonias enjoy warmth, atmospheric moisture, and shade at this season, and it is advisable, if convenient, to devote a house or pit entirely to them. Such a house, if kept at a minimum temperature of 55°, may well be used for the popular B. Gloire de Lorraine, and to grow them at their best, the house should be closed early in the afternoon, and the plants well syringed. It is more than likely that the "fungus" alluded to in last week's issue (p. 329) is the result of the attack of a mite [Undoubtedly, Ed.] which secretes itself by boring into the buds, soft shoots, and leaves, the result of such attacks being brown fungoid-like patches on the stems, and the dropping of leaves. This has to be fought persistently by vaporisation of nicotine preparations two or three times at intervals of a few days.

Foliage Plants.—Many of the ornamental foliage plants of the hot-house which were raised from cuttings will now be ready for potting. For a few days after potting them it will be necessary to afford shade till root action takes place, but the mistake should not be made of leaving such sun-loving plants as Crotons, Dracenas, Coleus, &c., mixed among others which like shade, as the consequent result would be to partially spoil both.

Gloxinias, &c.—The latest batch of old corms of Gloxinias and Achimenes, together with some more Gesneras, should be started, and at this late part of the season they may all be put into their flowering pots, pans, or baskets direct; and if water be carefully applied, there need be no fear of the soil becoming stagnant.

Justicias.—The plants in the warm houses may now be removed to cooler quarters, and treated during the summer similarly to greenhouse subjects. Any plants which have become leggy, or in any way deformed, should be denuded of their shoots, many of which can be utilised as cuttings, or thrown away.

THE FLOWER GARDEN.

By R. DAVIDSON, Gardener to EARL CADOGAN, Culford Hall, Bury St. Edmunds.

Removing Spring-flowering Plants from the Beds.—When the flowers of the different kinds of plants are over for the season, a beginning should be made with the clearance of the beds. Aubrietias may be lifted and split up into small pieces, planted in nurse beds in the reserve garden, and well attended to for about three weeks, particularly as regards shading them from strong sun, and if well attended to they will then become fit for planting in the beds and borders in the autumn. Similarly Arabis albidia, Alyssum saxatile, which last I consider is one of the hardiest and most effective spring bedders, may be taken up and divided, the two-years-old plants being discarded, and the one-year-old plants reserved for planting in the autumn, making a sowing now for succession, which is the best method of raising stock of Alyssum saxatile. Double Primroses should be increased by division of the root-stock, the divided pieces being planted in beds in a cool aspect, and where there is partial shade. The single-flowered Bunch Primroses, one and two years old plants, should be reserved and treated like the double-flowered varieties. Seeds of this type of Primrose should be sown for succession as soon as the new seed is ripe. The spring-flowering species of Phlox, so exceedingly bright and free-flowering, should also be removed to the reserve garden, planting them in beds which are exposed to the sun. A little later shake a small quantity of light soil amongst the larger tufts, into which the trailing shoots will make roots in a short space of time, and become of good size by the autumn. Cuttings of these Phloxes may

be inserted in sandy soil in a cold frame, and kept close and shaded from bright sunshine until the roots form; and when well rooted be removed to an open position in the reserve or the kitchen-garden, and grown on till the autumn of the following year, when they will have formed clumps of a size fit for planting in the flower beds.

Roses should be given an extra amount of attention from now till the end of the flowering season. Generally there is a good show of flower-buds, and if the weather be hot and dry, the plants should be afforded water copiously, preferably rain-water. The Rose-grub is doing much harm to some of the bushes, and must be picked out of the curled up leaves in which they are ensconced, and destroyed. Aphides must be destroyed by syringing the foliage with a mixture of soft-soap and rain-water. Dwarf bushes and standards should not be allowed to carry every shoot that grows, but the weaker should be thinned out, and such as grow in the middle of the bush or head removed altogether, as they will never produce a bloom, and they impede the circulation of air and rob the energies of the plants. The flowering shoots of plants grown for cutting only should also be thinned a little, say three or four to a branch, and it may be necessary to remove all the buds but the central one from each shoot. This may seem like wasting the energy of the trees, but in order to obtain good blooms, it is a practice that must be followed.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Raspberries.—Established plants usually throw up many more shoots from the base than are required for next year's fruiting. Thin these out, leaving only the strongest to take the place of those that will carry fruit this summer. If the soil be of a light character, afford the plantation root-waterings each week during dry weather. This will benefit the fruit and the young canes, especially if drainings from the cow-yard or stable can be used for the purpose, diluting the same if required. Cut up with the Dutch-hoe all suckers that are a foot away from the stools, and place a good mulch of strawy manure a yard in width on each side of the row. The autumn-fruiting varieties should also be thinned out if the canes are crowded.

The Fig.—Trees against walls or trellises will need to be freely disbudded as soon as the shoots can be handled with the finger and thumb. If the trees become in the least crowded the wood made this season will not ripen perfectly, and therefore will fail to crop next season, even if the immature shoots escape destruction by frost. Allow sufficient space between each young shoot, that all the leaves may be exposed to direct sunlight. Pinch the point from young shoots at the fifth or sixth leaf, and encourage the secondary growths, as these shoots will produce next year's crop. The earliest growths will form fruits that will fail to ripen this year, and should be rubbed off. Trees growing as standards or bushes in the open, require similar treatment in the way of thinning out the shoots, but very little pruning with the knife will be required in autumn or the following spring.

General Remarks.—In districts where there has been no rain, heavy land will be showing some inclination to crack, especially where the ground has not been kept well stirred. Where such is the case it should be lifted with the fork 2 or 3 inches deep, so that when the rain does come it shall penetrate evenly to the roots, and not all be wasted in one direction. Keep the flat-hoe working between fruit-trees and bushes as often as labour will allow, and still persevere with measures for the eradication of all insect pests. If spraying with Paris Green [Poison, Ed.] for the Codlin-moth grub is thought advisable, it should be carried out as soon as the fruits are formed, at the rate of 1 ounce to 20 or 25 gallons of water. Repeat the operation if found to be necessary.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plant 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.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, MAY 27—
 { Key Guild Annual General Meeting and Dinner.
 Bath and West and Southern Counties Society's Show at Plymouth (five days).
 { Royal Horticultural Society's Show in the Temple Gardens, Thames Embankment (three days).
 WEDNESDAY, MAY 28—
 { Annual Dinner of the Gardeners' Royal Benevolent Institution, at the Hôtel Métropole.

SALES FOR THE WEEK.

TUESDAY, MAY 27—
 Special Sale of rare Established Orchids, by Protheroe & Morris, at 67, Cheapside, at 12.31.—Annual Sale of Bedding and other Plants, at Park Nursery, Stanmore, by order of Mr. J. Liou, by Protheroe & Morris, at 12.—Palms, Bays, Plants, &c., at Pollexfen & Co.'s Rooms.
 WEDNESDAY, MAY 28—
 Palms, Plants, Bulbs, &c., at 67 and 68, Cheapside, by Protheroe & Morris, at 12.
 THURSDAY, MAY 29—
 Bays, Palms, Davallias, &c., at Pollexfen's Rooms.
 FRIDAY, MAY 30—
 Orchids in large variety, at 67 and 68, Cheapside, 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—57.2°.

ACTUAL TEMPERATURES:—

LONDON.—May 21 (6 P.M.): Max. 50°; Min. 43°.
 Weather cloudy, dull, wind N.W.

PROVINCES.—May 21 (6 P.M.): Max. 53°, Cape Clear; Min. 45°, Peterhead.

Plant Breeding.

WE learn from the March number of the *Journal of the Board of Agriculture* that the United States Department of Agriculture have recently issued a Bulletin, by Professor W. M. HAYS, on plant-breeding, which contains a good account of the technique of the subject, and some stimulating suggestions. "Many look to the production of improved varieties of cultivated plants as a sure way of increasing the yield and quality, and already results have been achieved sufficiently remarkable to encourage much hope for the future. One of the most striking instances is furnished by the Sugar-Beet, which in Germany, in 1836, contained only five per cent. of sugar, and now furnishes not much less than fifteen per cent. During the same time the gross yield of roots per acre has increased by about fifty per cent., so that the output of sugar per acre is now over four times as great as seventy years ago, a result for which careful breeding is chiefly accountable.

In this and other countries much has been accomplished in the matter of plant improvement, but much undoubtedly remains to be done. It is work that makes no exceptional demands on capital or skill, as is proved by the fact that many of our best varieties of plants, especially vegetables, flowers, and fruits, have been raised by amateurs, in not a few cases by cottagers. It is, however, work that requires much perseverance, and at certain seasons much attention; though the demands that it

makes on time necessarily depends upon the extent to which it is carried on. For its successful performance it requires intelligent observation, a knowledge of the gardener's or farmer's requirements, delicate manipulation, and accurate recording, rather than strenuous exertions.

Two main lines are usually pursued to produce a new and improved variety of crop-plant. One method of procedure, which has been successfully adopted by some of the best known workers, is to make a careful examination of the individual plants in crops cultivated in the ordinary way, and from these to make a selection of those that are distinguished by superior merits. Such superiority may take the form of yield, capacity to tiller, a high percentage of starch (as in Barley and Potatoes), or of sugar (as in the case of Turnips, Swedes, and Mangolds), capacity to ripen early, to resist disease, &c. But whatever may be the object selected, it must be kept steadily in view, and all individuals in the progeny that fall short of the character that may have been set up must be carefully eliminated. By intelligently pursuing such a system of selection during a series of years, a distinct type or variety will be produced.

The other method commonly pursued begins by artificially crossing two individuals whose superior qualities it may be desirable to unite in a single variety. The seeds that result from such a cross are sown, and it is generally found that the resultant plants are extremely mixed in character. Many are inferior to either of the parents, others occupy an intermediate position, while a few may be superior to both. It is the latter only that are reserved for subsequent cultivation, and from their progeny also many individuals must be eliminated. In the course of time, however, the percentage of inferior individuals becomes smaller and smaller, until, at last, the variety comes true to type.

In the main, these two systems of improvement are the same. The plants selected in the first case may be natural crosses, while in the second they are artificial crosses, but the improvement is, in both cases, completed by selection. The larger the number of plants selected or of crosses effected, the greater are the chances of a really valuable new variety being found, and for this reason it is desirable to work with large numbers, though, of course, one may be fortunate in producing a valuable variety even when the work is being carried on but on a very small scale.

In sowing pedigree seeds, the soil should as a rule be of good quality, so that the resulting plants may have the opportunity to produce the maximum yield. But it is of even greater importance to arrange matters so that each individual plant is placed in possession of precisely the same conditions of growth. Only in this way can we be sure that the appearance of superior qualities in the progeny is due to something inherent in the plant itself, and not to the specially favourable character of the situation where it has been grown.

Farmers have generally given more attention to the breeding of animals than of plants, but just because less has been done in the latter field, more probably remains to be accomplished. It is surprising how quickly a single plant multiplies, if the con-

ditions be made as favourable as possible. The late Mr. SHIRREFF gives an instance from his own experience. In the spring of 1819 he found a specially vigorous Wheat plant in a field on his farm in East Lothian, and he resolved to propagate it. He therefore removed the plants in its neighbourhood, and gave it a dressing of manure, the result being that, notwithstanding some damage by hares, he harvested from this single plant 63 ears, containing 2,473 grains. In the following autumn these grains were dibbled in wide rows in a suitable piece of ground, and in the two succeeding seasons the produce was sown broadcast. The result was that the fourth harvest from the original plant yielded 42 quarters of seed, which was subsequently placed on the market under the name of Mungoswells Wheat."

LÆLIO-CATTLEYA × QUEEN ALEXANDRA (SUPPLEMENTARY ILLUSTRATION).—At the meeting of the Royal Horticultural Society Feb. 11, Messrs. JAS. VEITCH & SONS, Ltd., Royal Exotic Nursery, Chelsea, exhibited and received a First-class Certificate for one of the most beautiful of their many hybrid Lælias and Cattleyas, which they named in honour of our Queen. It was the result of intercrossing their fine Lælio-Cattleya × bella (which they obtained between Lælia purpurata and Cattleya labiata) with Cattleya labiata Trianaei, and thus the beautiful subject of our illustration has two sections of C. labiata in its composition, which has resulted in widening the petals, and altogether making it the most perfect flower of its class. The sepals and petals are of a light rosy-lilac, the lip an intense ruby-purple with orange-coloured disc, the basal portion being reddish with pale yellow lines.

ROYAL HORTICULTURAL SOCIETY'S TEMPLE FLOWER SHOW, MAY 28, 29, 30.—The 15th great flower show of this Society, held annually in the Inner Temple Gardens, Thames Embankment, will open on Wednesday, May 28, at 12.30. Judging from the large number of entries received, the Temple Show promises to be quite up to its usual standard of excellence. The following well known amateurs are among the names of intending exhibitors:—Lord Aldenham, vegetables; Sir Frederick Wigan, Bart., Orchids; Sir Trevor Lawrence, Bart., Orchids; Hon. A. H. T. Montmorency, Tulips; Capt. G. L. Holford, C.I.E., Amaryllis; Leopold de Rothschild, Carnations; Pantia Ralli, Caladiums and fruit; Alex. Henderson, M.P., fruit; Reginald Farrer, Alpines; John Rutherford, M.P., Orchids; J. Colman, Orchids; and A. Meyers, Calceolarias.

— At a general meeting of the Royal Horticultural Society, held on Tuesday, May 20, seventy new Fellows were elected, among them being:—Sir John Stirling Maxwell, Bart., Sir Albert Rollit, M.P., Lady Trevor, Lady Stirling Maxwell, Lady Settrington, and Lady Ryder, making a total of 590 elected since the beginning of the present year.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We would remind our readers that the sixty-third Anniversary Festival Dinner of this Institution will take place on Wednesday next, May 28, at the Hôtel Métropole, when, as has been already announced, the Duke of MARLBOROUGH will preside. His Grace will be supported by influential gentlemen, amongst whom it is hoped will be Mr. WINSTON CHURCHILL, M.P. Contributions to be placed on the Chairman's list and announced at the Dinner are earnestly solicited, and should be sent to the Secretary,

at 175, Victoria Street, London, S.W., who will gladly answer any communications made to him.

THE HURST & SON'S MUSICAL SOCIETY.—Intending visitors to the forthcoming show of the Royal Horticultural Society in the Temple Gardens, and others, should note that the above-named society will give a special ladies' evening concert (the last of the season) in the Crown Rooms, Holborn Restaurant, on Tuesday next, May 27, at 8 p.m. Tickets can be obtained from the Hon. Secretary or any of the members, 152, Houndsditch, E. Reserved seats 2s., unreserved 1s. and 6d. each.

MALFORMED CUCUMBERS.—Last year we published illustrations of a remarkable series of malformations of male and female flowers of Cucumbers. This year Mr. EASTER, of Nostell Priory Gardens, Wakefield, sends us a similar instance. It will be remembered that the carpels or true fruits are embedded in a fleshy covering derived from the flower-stalk or axis of the plant. In the case before us this axial sheath does not entirely envelop the carpels, but leaves the upper portion of them protruding and uncovered, as happens in the Turks' Cap Gourds. But the singular thing in Mr. EASTER'S specimen is the production from the rim of the axis of a whole series of imperfect leaves, some of which are petaloid. These encircle the protruding carpels, as in a hypogynous flower.

"THE WESSEX OF ROMANCE."—This book, written by Mr. W. SHERREN, deals with the Wessex of Mr. HARDY'S romances. The author is clearly a great sympathiser with Mr. HARDY and his novels, and this book expresses his appreciation of the man and his works. "Wessex," says the introduction, "is the central theme, and every available fact which would tend to illuminate Mr. HARDY'S treatment of it has been incorporated. Aiming at the completest exposition of the subject possible, the well known novels have been approached through a character-study of the people, thus providing a rough sketch of the author's material." Readers interested in folk-lore and dialect, will enjoy the examples here given, and all must admire the illustrations of scenery included in this book, which appeal even to those who do not particularly care for the details of the much-praised novels. The publishers are CHAPMAN & HALL, Ltd., London.

SPINACH.—A question was recently put to us as to a certain Spinach, said to have been once popular. We were not able to trace the particular plant in any book or catalogue at our disposal, but the specimen sent to us was none other than the common Water Dock (*Rumex Hydrolapathum*), a plant we should certainly not recommend for any culinary purpose.

FISH POISON.—Dr. KYLE, of St. Andrew's, has studied the effects of *Euphorbia hiberna*, used as a fish poison by the natives of some parts of Ireland. Tannic acid appears to be the active ingredient. It produces its fatal effects by causing inflammation of the gills, and consequent suffocation.

JOURNAL D'AGRICULTURE TROPICALE.—We note that the number of this publication, dated 30 April, contains articles on:—How to extract Rubber (illustrated), Banana Plantations, Machines, Preparation of Liberian Coffee, American Plans for Increase in the Consumption of Rice, Negro Technical Mission for the Propagation of Cotton at Togo, Agricultural details concerning Henna, Assam Tea, Dates, *Plectranthus*, Rubber, Papyrus, Rice, Agave

fibre, Cacao, Vanilla, Essential Oils, Indigo, &c. There are also commercial jottings on Rubber, Orsil, Tea, Coffee, Cacao, Cotton, Pimento, Rice, Sugar, &c. This useful French publication is issued by M. J. Vilbouchevitch, 10, Rue Delambre, Paris.

"FORMAL GARDENS IN ENGLAND AND SCOTLAND. . . ." By H. INIGO TRIGGS, A.R.I.B.A.—The first and second parts of this beautiful work has been issued by Mr. B. T. BATSFORD, 94, High Holborn. Its nature will be indicated by the following condensed extracts from the prospectus:—

The work will comprise 120 plates (size 17 inches by 13 inches), from measured drawings and sketches, and from photographs specially taken for the work by Mr. CHARLES LATHAM. The illustrations will consist of entire plans, and photographic and perspective views of existing gardens, together with sketches, measured drawings, and photographs of gate entrances, terraces, balustrades, steps, garden-rooms and summer-houses, bridges, columbaries, sundials, figures and vases in lead and stone, fountains and ponds, topiary work, &c. There will also be given a series of reproductions from old engravings, showing the complete schemes of some of the finest gardens now no longer existing. The considerable amount of attention which, during the last few years, has been devoted to the architecture of the Renaissance period in England, has naturally led to a study of the gardens which formed so important a part of the English home in those days. These gardens are generally known as "formal," a name which was first applied to them by the early landscape gardeners, who used it in an invidious sense as signifying "unnatural," and it may be admitted that in some instances they were not without justification. The name, however, is in itself quite unobjectionable, and has been accepted by most recent writers on the subject as applied to that class of gardens which were conceived as part of the entire plan or scheme with the building, and are in the nature of a setting or frame to it. It would, perhaps, be more appropriate to describe such gardens as "architectural," since they partake to some extent of the architectural character of the house, to which they form a complement. The author, having visited many of the finest gardens in the Kingdom, and made studies of their plans, and of the most interesting features to be found in them, has prepared a careful and comprehensive selection for publication in its pages. As comparatively few examples now show the complete scheme as originally designed, owing to works of alteration and the changes wrought by long periods of neglect, it has been thought desirable to include a series of plans and perspective views, showing some of the most complete and satisfactory, as they surrounded notable country houses in the sixteenth, seventeenth, and eighteenth centuries. These plates have been prepared from fine old engravings and documents, often contemporary with the subject they depict, and it is believed they will form a valuable feature of the book. A series of more than fifty fine photographs, taken by Mr. CHARLES LATHAM, show general views and parts of gardens, and such features as it has been considered could not be adequately illustrated by drawings.

The illustrations are excellent, and will be invaluable to architects and to gardeners who may be called on to adapt their gardens to the architecture of the mansion, so as to make one harmonious whole. We may hope that as the work proceeds there may be some indication given of the most suitable plants to be used in such gardens. To make a "wild garden" on an architectural terrace, or a herbaceous border in the courtyard of the mansion, would be as unsuitable in its way as to copy the topiary work of the seventeenth century at the beginning of the twentieth.

"JAHRESBERICHT UEBER DIE NEUERUNGEN UND LEISTUNGEN AUF DEM GEBIETE DES PFLANZENSHULZES": Von Professor Dr. M. HOLLRUNG; third volume, for the year 1900. (Berlin: PAUL PAREY.)—The above annual report on the subject of plant-diseases, and the methods of combating them, contains a large amount of valuable information for gardeners, foresters, and agriculturists in general, or at least to such of them who are familiar with the German language. The volume is divided into two sections, the first of which relates to the classification and propagation of the diseases themselves, with

a chapter on the laws and regulations dealing with them. The second section considers the causes of diseases, and gives full descriptions of such maladies, insect and animal pests, as more especially affect corn and fodder-plants and grasses, roots of all kinds, stone fruits and others, berries, nuts, Vines, and ornamental plants. The various methods of treating the diseases of plants are discussed according to whether they are based on a natural, or a mechanical and chemical principle. The book contains a list of the phytopathological works that were published in the year 1900. These are, for convenience of reference, classified according to the plan followed in dealing with the subject in other parts of the report. The value of the volume is further increased by a good index, in addition to a full table of contents. All authors of works on phytopathological subjects, who may wish to have notices of them included in future volumes of this report on plant-diseases, are requested to send a copy of their publications to Dr. M. HOLLRUNG, Halle-a-S., Germany.

COUNTY OF MONMOUTH.—The report of the organising secretary, Mr. W. J. GRANT, to the technical instruction committee, contains details upon the work carried out since January 1 last:—

Horticulture, Reformatory, Little Mill.—Instruction at this farm-school will, during the spring and summer months, be almost entirely confined to out-door lessons, equally divided between agricultural and horticultural subjects. The course of lectures at Usk, and at Llanddewi Skirrid, have been well attended.

Hedging Classes.—These classes are being held at Caerwent, Llanddewi, Rhydderch, and Raglan, and are attended almost entirely by farmers' sons.

Orchards and Fruit Culture.—The following districts have been visited for the purpose of giving demonstrations and lectures upon the planting and pruning of fruit-trees, both in orchards and gardens, including gardens or holdings occupied by cottagers or small holders:—Usk, Raglan, Dingestow, Mitcheltrey, Pontypool, Bedwas, and Llanddewi Skirrid. In every instance the attendance and interest taken by those present was most encouraging, and through the kind influence of Mr. LEGARD, H.M. Inspector, the elder lads from the schools in the district visited, not only attended, but also took a most intelligent interest in the object-lessons placed before them. Fruit and other trees have been planted at the Cross Ash Police Station, the property of the Monmouth County Council. In addition the report mentions Pasture Experiments, Sheep-shearing Instruction, Poultry Breeding, Bee Keeping, Working Dairy School, and Cheeso School.

Rainfall.—The number of days upon which rain fell was thirty-four, compared with thirty-two of last year, during the period of ninety days, with a total rainfall of 8.75 compared with 5.63 recorded last year, and 14.26 recorded for the same period of 1900, showing the rainfall to be 3.12 above that of last year's total for the same period.

HORTICULTURAL CLUB.—Probably the vast majority of Fellows of the R.H.S. are unaware of the existence of the Horticultural Club, and yet it is a very pleasant little club, and does a vast amount of good work for horticulture. Sir JOHN T. LLEWELYN, Bart., is the kind and genial president; HARRY J. VEITCH, Esq., is the treasurer; and E. T. COOK, Esq., has quite recently been elected secretary, in the place of that veteran octogenarian gardener, the

Rev. H. H. D'OMERAIN, who has acted as secretary since 1865, and is now obliged to retire on account of increasing infirmities, but who carries with him the love and good wishes of every member of the club, indeed of all who have ever met him. The subscription to the club is only £1 1s. a year, and the pleasant house dinners which are held once a month on one of the R.H.S. Tuesdays form delightful little reunions of a small band of ardent garden lovers, whose one wish is that others would come in and enjoy these evenings as much as they themselves do. At most of the house dinners a short paper is read on some horticultural subject, and a general discussion ensues, as gentlemen sit over their nuts and port, or coffee and cigars, as best they like. All is very informal, very homely, but as Sir JOHN said recently, "I have spent some of my pleasantest evenings in London at this club." So we think many others would find it if they would but join. "But how can we join?" Well, write to E. T. COOK, Esq., care of R.H.S., 117, Victoria Street, Westminster, S.W., and you will learn how. The club, too, serves as a most useful adjunct to the R.H.S. For the society has no convenient means at its disposal for offering the compliment of hospitality to any foreigner of horticultural tendencies who visits our not too hospitable shores, and this defect the club supplies, for if any foreigner of any distinction in the gardening world visits the R.H.S. at any time, the club is always ready and willing to offer hospitality and give a hearty welcome. At present the club barely numbers 100 members, all told; we should indeed be pleased if 100 more, who read this very commonplace note, would at once enrol themselves.—From *Journal of the Royal Horticultural Society*, April, 1902.

THE DEVON AND EXETER GARDENERS' ASSOCIATION will have their annual summer outing on Wednesday, July 16, when Greenway, the seat of T. B. BOLITHO, Esq., and Brookhill, the seat of R. F. WILKINS, Esq., will be visited. The journey will be partly by rail and partly by steamer, and the two gardens selected for inspection are known to contain a large number of interesting plants. Mr. A. HOPE is the honorary secretary.

FLOWERS IN SEASON.—Messrs. V. N. GAUNTLET & Co., of Redruth, send us sprays of the pretty purple-flowered *Solanum crispum*, figured as a Supplement in the *Gardeners' Chronicle*, December 7, 1901; a lovely tree *Præny* "Oceana," a very large, pure white flower; *Rhododendron Aucklandi*, white, with reddish stripes on the outside; a seedling *Berberis* named Knighti, and sprays of the lacinated form of the Golden Elder.

BOROUGH OF ROYAL LEAMINGTON SPA.—We have received a schedule of prizes to be offered at a horticultural show, to be held in conjunction with illuminated concerts, in the Jephson Gardens, on July 23 and 24. The prizes in the open classes are of a liberal character. The Secretary is Mr. A. J. NICHOLS, Portland Street, Leamington.

"HOLIDAYS IN EASTERN COUNTIES."—We have received a little handbook bearing this title, and edited by Mr. PERCY LINDLEY. It is a charmingly illustrated guide to an interesting district of England, and published at 30, Fleet Street, E.C. The Great Eastern Railway Company also have issued a list of farmhouse and country lodgings in Essex, Hertfordshire, Cambridge, Suffolk, and Norfolk. This guide has several illustrations and a map, so will prove useful to intending visitors to the districts mentioned. The G.E.R. publish also a list of producers of

farm and dairy produce in Cambridge, Essex, Hertford, Norfolk, and Suffolk, and undertake the quick despatch of the wares by passenger train. For detailed information apply to the Superintendent of the line, Liverpool Street Station, E.C.

DIE SCHWEIZER FLORA IM KUNSTGEWERBE. Verlag Institut Orell Füssli, Zurich.—This is a series of coloured quarto plates showing how the forms and floral arrangements of common wild flowers may be adapted to conventional designs for decorative purposes, whether on the flat or in relief. The designs are ingenious and excellent for their purpose, because in spite of the conventional way in which the flowers are treated, there is little or no violation of truth.

CULTIVATION OF TOBACCO UNDER TENTS.—We are informed that the cultivation of tobacco under tents is now being experimented with in Connecticut. The experiments were made originally at the State Agricultural Station, as well as by private individuals, in the effort to raise wrapper-leaf tobacco of the Sumatran type in fields completely covered and closed in all round with thin cheesecloth. The result is declared to be perfectly satisfactory. If memory serves us aright, the experiment was tried some thirty-five years since, at a place called Broxbourne, on the G.E.R., but only on a small scale, and was attended with a fair amount of success; netting of small mesh was used as a covering to the "pens."

THE CAMBRIDGESHIRE HORTICULTURAL SOCIETY, sends us a pamphlet containing schedules of prizes to be offered at exhibitions to be held on June 10 and November 5 and 6. The June show will be in the Fellows' Gardens, Trinity College, and will consist of plants in pots, cut flowers, fruits, and vegetables. That in November will be in the Corn Exchange, Cambridge, the exhibits being of *Chrysanthemums*, fruits, and vegetables. The Hon. Sec. is Mr. ARTHUR MATTHEW, 20, Trinity Street, Cambridge.

"CACTUS" FLOWERED CINERARIAS.—We have received from Mr. FREDERICK ROEMER, seedsman, Quedlinburg, some flowers of a strain of *Cinerarias* in which the strap-like petals are rolled back, giving them a very stellate appearance. Mr. ROEMER calls his strain *C. hybrida grandiflora stella*. The flowers sent are rather larger, but less rolled than those of the same type illustrated from Messrs. H. CANNELL & SON'S collection in our issue for May 11, 1901, p. 297. Mr. ROEMER'S flowers include some with white centres as well as self colours, varying indeed in colour equally with the older florists' varieties.

THE "JOURNAL OF THE SCOTTISH METEOROLOGICAL SOCIETY."—The full records of weather phenomena for the year 1899 are now published, and are of the usual valuable character. An interesting detail in this number is the record of the occurrence of fogs during the twelve years from 1889 to 1900. Of equal interest is the report on storms on the coasts of Scotland from 1881 to 1900. The greatest number occur during December, the smallest in June and July. Notes on the condition of the crops are incidentally given.

PRIZES FOR BOTANY AND ZOOLOGY IN ABERDEEN UNIVERSITY.—At a meeting of the Aberdeen University Court on the 13th inst., the following communication was read from Dr. JAMES W. H. TRAIL, Professor of Botany in the University:—"I offer to the University of Aberdeen two sums of £100 each, to be called respectively the Dickie Fund

and the Nicol Fund, to be invested, and the income derived therefrom to be employed yearly to provide prizes in the departments of botany and zoology respectively. I wish by doing so to encourage students to acquire skill to fit them for research in these sciences, to promote a fuller knowledge of the flora and fauna of Scotland by research in either, to induce students to aid in the equipment of the university for teaching and research in these sciences, and in the work of societies and institutions (especially in Aberdeenshire and the North of Scotland) organised to promote a fuller recognition of the interest and value of the biological sciences in education and otherwise, to connect these objects with the names of my teachers (DICKIE and NICOL) in botany and zoology, and to express in a slight measure my sense of what I owe to their instruction and example." And then follow the various conditions attached to the gift. In accepting the prizes, Principal MARSHALL LANG said he was sure the Court were all of one mind in their feeling of high appreciation of the munificent offer of Prof. TRAIL. They sympathised with Dr. TRAIL in the desire that the prizes should be associated with the names of Professor DICKIE and Professor NICOL, the two honoured teachers to whom he says he owes so much. In the name of the university he begged to offer Dr. TRAIL their gratitude for the wisdom, thoughtfulness, and liberality which prompted his offer. The Court heartily indorsed these sentiments.

PUBLICATIONS RECEIVED.—*C. J. Walker's Advertiser's Ready Reckoner and Year-Book for 1902* (London: 24, Coleman Street, E.C.). A useful publication to those for whom it is specially intended, giving, among much other information, the prices charged by all the principal journals for advertisements in different parts of their columns.—*Nature Notes*, May.—*The Agricultural Journal of the Cape of Good Hope*, March 27. Among the many items are articles and notes on: Practical Orchard Work at the Cape; Right Method of Trenching; Notes on the Fruit Crop; Fruit Exported; and Cyanide Gas Remedy for Scale.—*Agricultural Bulletin of the Straits and Federated Malay States*, March. Contents: Timbers of the Peninsular (continued), Gutta Percha Trees, White Ants and Rubber, Cocoa-nuts, &c.—*Annual Report of the Straits Settlements Botanic Garden for 1901*, by W. FOX. We learn that the year was considered to be very dry, as "only" 78.38 in. of rain fell in the gardens. The London average, it may be remembered, is about 25 in. The constant inspection of Cocoa-nut estates was rewarded by the rarity of the Palm-beetle, now that due attention has been directed to the pest. Experiments with Gutta Percha yield satisfactory results. Para Rubber growing is also progressing.

BOOK NOTICE.

NATAL PLANTS. Vol. III., Part 3.

IN spite of war and war's alarms, and in the imperturbable manner characteristic of men of science, Mr. J. Medley Wood, Curator of the Natal Botanic Gardens, and of the Natal Government Herbarium, plods steadily on with his excellently illustrated work, *Natal Plants*, the third part of the third volume; the first issue for 1902 being just to hand, the present issue bringing the number of species well illustrated and described up to 275. The number contains many interesting species, a few of which are in cultivation, and others would well adorn our gardens. Of these are *Cynium adonense*, E. Mey., plate 273, of the Natural Order Scrophulariaceæ, with large, white flowers, and of which the author says: "The species are thought to be parasitical on the roots of other plants, and so far as we are aware, have never been cultivated, though the above described species and *C. racemosum* (plate 211) are quite worthy of cultivation. *C. adonense* is usually found in open grassy ground, and its pure white flowers are very conspicuous, but rapidly blacken on being

handled; the whole plant becomes black in drying, as do other species of the genus. It is often known as the "Mushroom-flower," partly because it appears in the Mushroom season, and also, perhaps, it is often in the distance mistaken for a group of Mushrooms."

In the note accompanying the plate of *Phytolacca abyssinica*, Hoffm., an instance is given of the insidious manner in which alien plants not always desirable creep into a country. Mr. J. Medley Wood says: "This genus includes more than twenty species, two only of which are indigenous in Natal; but a third one, *P. octandra*, a native of Japan, has made its appearance in the Colony, and has spread considerably, especially along the railway lines; and it is said to be injurious to cattle."

admire the formal style, and the clipped trees shown in the photograph are necessarily a part of the general scheme. Some Japanese Maples on the other side of the house were very interesting to us, being of considerable height, and the stems several inches through them. There is a good specimen of *Araucaria imbricata* about 35 or 40 feet high, and several *Cupressus*, including *C. macrocarpa*. In the kitchen garden are some curious old ground cordon Pear-trees, the spurs upon which are 1½ ft. long. The Court was once the property of John Harrington of Kelston Park, but it is said that the expenses he incurred in entertaining Queen Elizabeth, who honoured him with a visit, were so great he was subsequently obliged to sell his estates in order to pay them. The place is now the residence of

WOODS USED FOR RAILWAY SLEEPERS IN AUSTRALIA.

IN reply to your letter of January 19 last, re timbers used for railway sleepers, I do not know of any publication on the subject, and have jotted down the following notes in regard to the timbers which are used to my knowledge in the various States of the Commonwealth. So far as I know, all sleeper-timbers are those of *Eucalyptus*. The various States are unequally endowed as regards their timber wealth, and hence timbers are used in some of the States which would never be employed in New South Wales and Western Australia, the two States which produce the best timber.

Queensland.—In this State *E. siderophloia* (Red Ironbark) is used as far as possible, but it is getting scarce, and hence Blackbutt (*E. pilularis*), Grey Box (*E. hemiphloia*), and other timbers are employed as well.

New South Wales.—Formerly Ironbark was alone used for sleepers (see my pamphlet on the Commercial Timbers of New South Wales, herewith for further particulars). But owing to the comparative scarcity of the Ironbarks, other timbers have been employed in addition, viz., Grey Gum (*E. punctata* and *E. propinqua*), Blackbutt (*E. pilularis*), Box of various kinds (*E. hemiphloia*, *E. Bosistoana*, *E. quadrangulata*), Mountain Gum (*E. goniocalyx*), and others.

Victoria uses *E. hemiphloia* (Grey Box), with some Bairnsdale Box (*E. Bosistoana*); also Blue Gum or Victorian Ironbark (*E. leucoxylon*), and Blue Gum (*E. Globulus*).

In **South Australia** the timbers used are Red Gum (*E. rostrata*), Blue Gum (*E. leucoxylon*), and Grey Box (*E. hemiphloia*). Sugar Gum (*E. corynocalyx*) was formerly used, but it is not now included when calling for tenders, owing to the immature timber of that species which was formerly supplied.

Tasmania uses Blue Gum (*E. Globulus*), Pepper-mint (*E. amygdalina*), and Stringybark (*E. obliqua*).

In **Western Australia**, Jarrah (*E. marginata*) is the timber chiefly used; but Karri (*E. diversicolor*) and other timbers are used on occasion. J. H. Maiden, Director, Botanic Gardens, Sydney.

WEST INDIES.

THE ISLAND OF ST. VINCENT

Is at present the scene of a terrible tragedy, the equal of which is not in the memory of man. But this far-off island is not unaccustomed to the "terrible," for in 1898 there happened a hurricane which committed such great havoc, that recovery was not completed on the occurrence of the present disaster. But it was recovering rapidly, and it would be interesting to know what the St. Vincent of April was like. The revenue was most encouraging, though it might have been larger had cultivators not done so much of packing most of their produce into one basket. The botanic station had proved a great success in the distribution of seeds, &c., to small proprietors, a race rapidly rising into importance by reason of their purchase of Crown lands—cash £1 per acre, and £2 on credit—a race which would, and which may yet, exert an immense influence on the fortunes of the island. The exports have gradually increased in value, food being no longer imported in such great quantities as immediately after the hurricane noted above; the principal exports have been sugar, rum, molasses, arrowroot, cassava, starch, cocoa, fruit, and vegetables, ground nuts, cotton, and seed—this in the



FIG. 117.—ST. CATHERINE'S COURT, SOMERSETSHIRE.

ST. CATHERINE'S COURT.

THE residence illustrated in fig. 117 is one of the oldest of such buildings in the neighbourhood of Bath, a district remarkable for a large number of very ancient houses of most picturesque appearance and historical interest.

St. Catherine's Court is said to have been built by Prior Cantlow about 1499, and its terraced garden carries one's memory back to a time when the Priors used to cultivate Vines above the upper terrace for vintage purposes. This upper terrace is approached by steps leading from the point from whence our photograph was taken, and is surrounded by stone palisades. Every feature of the garden is in strict accordance with the views of those who

the Hon. Mrs. Paley, only daughter of the late Lord Rayleigh of Tarling Place, Essex, and who was left the residence by her aunt, the Hon. Lady Drummond. Mr. John Shellard has the charge of the gardens. St. Catherine's is a parish to itself, in Somersetshire, and has a population of about 100 inhabitants. It is 4 miles from Bath, and about 3 miles from Bathampton Railway Station.

The church is a very old and very small building, adjoining the Court gardens; it was partly built or restored by Prior Cantlow. Among its possessions are a Norman font, a very curious but finely carved pulpit, and an altar-tomb with effigies to the Blanchard family, 1631.

vegetable kingdom; and there are many other commodities which are not in our ken. But there was no great "central" industry on which dependence could be placed for a wages basis, and which showed itself to the general condition of the labourers. Besides the botanic station, there had sprung up a school of agriculture with some twenty-five pupils, and an experimental ground of some extent. It may incidentally be noted that the production of sugar and rum was gradually giving way to cocoa, &c., as promising better results, justified by the demands or requirements of the English market. And this is about how things were when the great horror broke upon the world. In a few hours many of the best estates were ruined, and many hundreds of lives sacrificed, the earth blasted by heavy showers of ashes and dust, in some places to the depth of 2 feet. But this is history now, and the continuation is to be found in the work of rehabilitation, which we trust may be set on foot so soon as the existing great suffering has been conquered, for surely it would be a crime to cast adrift the fair land of St. Vincent.

The last report concerning the island can be had from Messrs. Eyre & Spottiswoode, H.M. Printers, West Harding Street, Fleet Street, E.C., price 2d. E. C.

THE APIARY.

ASPECT OF HIVES.

ALL hives exposed to the north and north-east should be defended against the cold wind by temporary fences of corrugated iron or thatched hurdles. This plan, if carried out, will afford a very considerable saving to the bee-keeper at the end of the season, for besides having good returns in honey, he will have the satisfaction of knowing that he has done all in his power to entice the bees to store honey.

Bee-pests.—Ants seem to have already commenced to invade the hives in some places, and where they are found to be inside a hive a little powdered naphthaline should be used on alternate days until they are got rid of. If the hives stand on stools, stand the legs in flower-saucers or saucepan-lids filled with water, which will keep out the ants and afford water for the bees. If the hives do not stand on legs, rub the bottoms and sides of the hives with a little carbolic acid and water, one part of acid to five or six parts of water. Wax-moths too will be laying their eggs very plentifully, and these should be destroyed at once, or they will soon overrun the entire hive, weaving webs from comb to comb. Let the bee-keeper destroy all queen wasps, and thus avert nest-building later on.

Artificial Pollen.—This should be placed near the bees in the shape of Pea-flour, mixed with small pieces of shaving and wood to enable the bees to crawl about with comfort, and obtain the pollen more easily.

FRUIT REGISTER.

FRUIT TRADE IN CAPE COLONY.

WE are in receipt of an array of figures respecting the imports and exports of the Cape Colony, from which we extract the following relating to the exports of fresh and dried fruit. The figures for 1899 give a total of £6,604, dried fruit amounting to £571; the total for 1900 was £9,130, dried fruit amounting to £826; £9,124 represents the total for the year 1901, when the value of dried fruit amounted to £1,353.

HOME CORRESPONDENCE.

DAFFODIL PETER BARR.—I notice in your issue of May 10 that Rev. C. Wolley Dod, after speaking highly of the above Daffodil, and one shown by our firm at Birmingham this year, goes on to say that it would be interesting to know where they were raised. My seedling is the result of a cross between Emperor and Madame de Graaff, Emperor being the seed-bearer. The cross was effected at Chilwell in 1895, and resulted in just twelve seedlings, which, on our removal to Lowdham, were taken there in their babyhood. Of the twelve seedlings only three have flowered as yet: the one above alluded to, a second with a long, narrow trumpet, the whole flower being rather a pale dull yellow; the third is a well formed and clearly defined bicolor. I have christened the large white one Florence Pearson. The habit of the plant is extremely vigorous, the leaves being as long and broad as those of very well grown Horsfieldi. It will be some time before Florence Pearson comes into commerce, as at present there is only one bulb with perhaps one offset large enough to detach when the bulb is lifted. This flower opens with a pale sulphur trumpet very like Madame de Graaff, but becomes much whiter than its beautiful parent when fully expanded. It will be very interesting to see the first flowers of the remaining nine youngsters. I fancy the trumpet of magnificorati section of Daffodils has been rather neglected by hybridists of the present generation. Why is this? Perhaps we have been lured on by the dream of scarlet "tea-cups" on pure white segments of the Sir Watkin type. Be the cause what it may, good trumpet Daffodils are now in the minority, and there is plenty of room for good, distinct varieties of vigorous constitution. We are especially short of good, healthy yellows; of course, King Alfred is a king indeed, and will not be surpassed for many a year, but we can do with an early variety as good, and a late one to follow Emperor, or, if possible, bicolor Grandee. Rev. Engleheart alone has given us enough beautiful things in the short-cupped section to last for fifty years, but I repeat there is plenty of room for good trumpet Daffodils of free, vigorous habit. J. Duncan Pearson, Chilwell Nurseries, Lowdham, Notts.

SPONTANEOUS SEEDLINGS OF NARCISSUS.—In reply to Mr. Burbidge's question, I may say that in the last twenty years many thousands of chance seedlings of Narcissus have appeared and disappeared in my garden. The course which the more vigorous of them run is this. They produce one flower and two leaves when presumably four or five years old from seed; next year they have increased to three or four flowers; the third year to ten or a dozen, with a crowded mass of leaves; and the fourth or fifth year, if not transplanted, they disappear. I have hardly ever attempted artificial crossing, and have seldom gathered any seed except to give to friends. I do sometimes pull off a few hundred seed-heads before they are ripe, as the crowds of seedlings which come are a nuisance. I seldom notice anything amongst them worth perpetuating, so most of them are left to die out where they come up. Amongst obvious hybrids which have appeared spontaneously, perhaps the most noteworthy are *N. cyclamineus* × *N. Ajax*, the former being a profuse seed-bearer. Some of these hybrids are quite as large and robust as say *pallidus præcox*. I have seen one or two with a pale perianth; some, probably crossed with *N. minimus*, bear the perianth at right angles to the crown, and are very elegant in form. A few crosses come between *triandrus albus* and *Ajax*, but these are delicate, and seldom increase. In fact, no *triandrus* is hardy in Edge garden, *triandrus albus* being persistent only by sporadic seedling, coming under south walls, which flower only for one or two years. Now and then an ugly giant of the *Horsfieldi* class appears, and I have separated and named three or four of these, but they have not met with the approval

of the Narcissus Committee. The most abundant, and perhaps the most pleasing, of the spontaneous seedlings are early flowerers, and seem to me to be crosses amongst *nanus*, *Tenby*, *pallidus præcox*, in every gradation of colour, and are sometimes very neat in form. I have selected a few of these, and made a stock, but in these days of giant forms little Daffodils attract no notice. At different times a good many double forms have come spontaneously from seed, but though I entirely dissent from the views lately expressed by Mr. Peter Barr that Parkinson knew more forms of double Daffodils than we do, these spontaneous doubles have seldom anything characteristic, and vary in size and degree of doubling more than in colour. I formerly collected and sowed seed from the *Tenby* Daffodil, which produced several doubles. Amongst wild hybrids which I have cultivated, the Pyrenean *Barnardi* alone produces spontaneous seedlings abundantly. These often revert absolutely to the wild parents, amongst which they grow, viz., *N. muticus* (Gay), *N. variformis*, and *N. poeticus*; but they often assume such forms as those called by Mr. Bair Nelsoni and Backhousei, but I never got anything really good from them, though the varieties of shape are endless. There are three well-known Daffodils supposed to be of hybrid origin which I have cultivated for many years without ever finding a seed on them. One is *N. Johnstoni*, which increases fast, either in the grass or border, by offsets; another is *triandrus pulchellus*, which has been in cultivation, and has remained perfectly uniform for more than a century. It is barely hardy at Edge, but increases fast with frame cultivation, producing neither seed nor pollen; and its origin is unknown. The third is by far the most interesting wild hybrid amongst Narcissus, and is between *N. juncifolius* (Loiseleur) and *N. muticus* (Gay), being found sparingly amongst its parents on the Pyrenees near Gedre. About fifteen years ago I got sixty bulbs collected for me, half of which I distributed to botanic gardens, but I am afraid it is mostly lost. I keep it under a south wall on a raised border composed chiefly of finely-broken granite. It is absolutely barren, and increases very slowly by offsets. C. Wolley Dod, Edge Hall, Malpas.

"WINTER LINGERING CHILLS THE LAP OF MAY."—The above quotation from Goldsmith could never be more truly applied than to the present month of May. Since I wrote you last week the cold winds which blew for some time from the north, north-east, and east have veered round to the south and south-west, bringing with them a somewhat milder atmosphere; but still the weather is ungenial. We are daily visited by cold, driving rains, mixed with showers of hail, snow, and with but little sunshine, and sometimes accompanied by lightning and a good deal of thunder. Much of the Pear blossom is killed; but that of the Apple not being so generally forward has a chance of escaping—provided the weather should become a little less erratic. A farmer, for whom I opened a few of the killed Pear blooms, expressed his sorrow, but he evidently had his mind already made up as to the safety of the Apple, and stated that he had his experience from years of observation, namely, that when there was a shortage of spring grass, or rather, I should say, grass in the spring, a good Apple year was sure to follow. I have never heard the observation before, and it may be just about as true as much other similar rustic folk-lore. Potatoes as soon as they show through the soil are blackened, unless they are carefully covered in some manner. In the mornings it is not unusual to find ice on water of the thickness of a penny piece. Nettles and other rank weeds lie flat on the ground. Birds nevertheless, especially thrushes and blackbirds, appear to be breeding. These birds are protected here, though we confess to throwing a few stones at them during Strawberry-time, but with the hope that none of them will be hit.—Since writing the above, Whit Monday has come and gone, during which the wind

again veered round to the north, and blew a piercingly cold gale, accompanied with driving showers of rain. We have now had near upon eight months of winter, but we are not certain whether we are to have four months of decent summer. It is truly said "Winter lingering chills the lap of May." W. Miller.

"THE NEW ORCHARD AND GARDEN."—In the article on John Parkinson (p. 317), it is remarked that William Lawson published *The New Orchard and Garden* in 1597. I would feel grateful to Mr. Boulger for any data proving the above date to be correct. London mentions the same date and also Dr. Hogg, but hitherto I have not happened on any proof that the work in question was published so early. B., Scotland.

PRICES OF PARKINSON'S "PARADISE."—A remark was lately made on the current prices of the above work. For a book that is not uncommon, and copies of which are almost always in the market, the increase in its value is really wonderful. I have heard of a copy being bought in a lot of books for which half-a-crown was paid; and a bookseller with whom I have dealings tells me he has catalogued it as low as 13s. As late as twenty years ago a copy could have been had for about £5, yet a lady lately told me she had been asked over £40 for one she priced. I daresay a complete copy, with the "Table of Vertues" at the end of the book, would not be dear at £20; whether it is worth that sum is another question. In many respects it is unique, much of its teachings being thoroughly practical, and of a nature unaffected by the lapse of time. It appeals to many classes, too, and the love of books of the kind of the *Paradise* seems to be on the increase, with no hope at the present of a facsimile edition supplanting the original. Holders of copies, in the interest of posterity, should be very careful of this masterpiece. B., Scotland.

MR. MURRELL'S CYCLAMEN PERSICUM.—The specimens of *Cyclamen persicum* exhibited at the meeting of the Royal Horticultural Society, March 11, by Mr. C. Murrell, gr. to Col. Rogers, Burgess Hill, called forth general admiration. Mr. Murrell is in the habit of exhibiting *Cyclamens* at the Spring Show of the Brighton Horticultural Society, early in April, and the plants seen in London on March 11 was an indication of what Mr. Murrell is in the habit of exhibiting in his own district. Not only were the specimens admirably grown, the foliage bold, ample, and yet compact; not only did they carry wonderful heads of bloom, but the latter were of an astonishingly large size, and especially the varieties with deep colouring; and having regard to the limited convenience Mr. Murrell has for cultivating such fine specimens, his success is all the more remarkable. The corms producing these specimens were mainly three years old. Mr. Murrell asserts that with proper management a corm will bloom for ten or twelve years, and even longer, but that for exhibition specimens they may be two, and not more than three years old. The compost used by Mr. Murrell consists of two-fifths of coarse leaf-mould, a similar quantity of light yellow loam, one-fifth of dry cow-dung rubbed to a coarse powder, and enough white sand as will keep the compost open. Mr. Murrell takes the precaution of scalding or baking the cow-dung to destroy the larvae of insects. The cow-dung is collected during dry weather and stored for use, and the leaf-mould is well moistened before being added to the compost. The loam is rubbed fine rather than sifted. Mr. Murrell favours the potting of the corms in the pots in which they are to flower—of course, after the necessary period of rest, and as soon as they commence to make fresh growth. Mr. Murrell puts the leading points in the successful cultivation of the *Cyclamen* as follows: As far as possible a constant and unvarying temperature, a moist atmosphere, abundant supplies of water, while avoiding any approach to stagna-

tion of moisture at the roots; free circulation of air, but avoiding cold draughts; light in winter, shade in summer, and keeping the plants free from insect pests. Mr. Murrell is a raiser as well as a cultivator. His present fine strain, with their deep colours and gigantic blossoms, has been obtained by careful cross-fertilisation done in March and April, the former month preferred. He assists Nature in developing size of blossom by fertilising not more than four flowers, so as to secure large, plump seeds. The seeds he thus saved are sown as soon as ripe, and fine plants are quickly obtained from them. Mr. Murrell holds that corms are not worth the trouble of cultivating after they are three and four years old. R. D.

CAMPANULA RAPUNCULOIDES AND OTHER SPECIES.—I fully agree with Mr. S. Arnott's recent statements in regard to this and other *Campanulas*, and especially in respect to the habits of certain stoloniferous species to travel wide and become a nuisance, overpowering other strong, free-growing plants. Once the stolons get among the tufted class of plants, it is almost an impossibility to eradicate them, being even worse than Couch-grass, the roots being very brittle, and some bits are sure to be left in the soil. The small-growing species, *C. pusilla*, is another bad example of a plant that at times becomes a nuisance. E. H. Jenkins, Hampton Hill.

RECENT FROST.—The frost on the morning of May 14 was most disastrous to the Strawberry and Cherry crop in this neighbourhood, Cherries (with the exception of those on walls) being ruined, and all early flowers on Strawberry Royal Sovereign are blackened, but later flowering varieties have not suffered so much. I hear of Peas in the Thames Valley being cut to the ground. So far Apples and Pears have not been much injured, but I fear unless better weather ensue the crops will be poor. C. Page, Dropmore Gardens, Taplow.

EFFECTS OF THE WEATHER.—This morning (May 14) we had 11° of frost. Liriiodendrons had every bud killed, Eremurus, Incarvilleas, Rheums, Heucheras, and other kindred plants in flower and bud are black; even the flowers of many alpine plants have been destroyed. There is hardly a bud which was at all exposed that will open. I never remember such destruction at this date. Amos Perry, Hardy Plant Farm, Winchmore Hill, London, N.

Obituary.

JOHN WILDER.—Mr. John Wilder, who for between fifty and sixty years had been employed in the Royal Nursery, Slough, died there on the 10th inst. after a long and painful illness, the commencement of which caused his enforced retirement a few years ago. He was one of the candidates elected on the pension list of the Gardeners' Royal Benevolent Institution at the last election, being at that time totally blind and a great sufferer. On the occasion of his funeral he was followed to the grave by several of his fellow-workmen; and among the wreaths sent was an elaborate one bearing the inscription "With sincere regret from H. & A. Turner and relations;" and another "With sincere sympathy from the employes at the Royal Nurseries, Slough." He leaves a widow and grown-up family.

TRADE NOTICE.

THOMAS ROCHFORD & SONS, LTD.

We learn that the above-named Company has been registered with a capital of £75,000 in £5 shares. The objects of the Company are to carry on the business of nursery and seedsmen, fruit-growers and sellers, and market-gardeners, farmers, fruit and pickle preservers,

and cognate branches. The signatories are: T. Rochford, Willowdene, Cheshunt, Herts; G. M. Rochford, Turnford Hall, near Broxbourne, Herts; J. Rochford, Turkey Street, Waltham Cross; E. Rochford, Crossbrook Street, Waltham Cross; J. Rochford, Turnford, near Broxbourne; G. Rochford (Mrs.), Willowdene, Cheshunt, Herts; M. A. A. Rochford (Mrs.), Turnford Hall, near Broxbourne, Herts; one share each. No initial public issue. The directors are: Thomas Samuel Rochford, John Rochford, Joseph Rochford, Edmund Rochford, and George Michael Rochford. Registered office: Turnford Hall Nurseries, Turnford, near Broxbourne, Herts.

SOCIETIES.

ROYAL HORTICULTURAL.

MAY 20.—The meeting of the Committee on Tuesday last in the Drill Hall, Westminster, following immediately upon Bank Holiday, was very much less in extent than recent meetings have been. There was a better show, however, than might have been expected, especially as the large firms were already preparing for the great exhibition of the Society, which will be opened in the Gardens of the Inner Temple on Wednesday next.

Orchids were shown in considerable numbers, and the Orchid Committee recommended one First-class Certificate, one Botanical Certificate, and six Awards of Merit, to novelties.

The FLORAL COMMITTEE recommended Awards of Merit to a new variety of Carnation, a new Rose of the Wichuriana type, and to a new species of Iris.

There were not many exhibits before the FRUIT AND VEGETABLE COMMITTEE, the few there were consisted of Nectarines, Peaches, and Strawberries. An Award of Merit was recommended to a new early Peach, shown by Messrs. T. RIVERS & SON.

The NARCISSUS COMMITTEE had not a great deal of business to transact. Three Awards of Merit were recommended, two to varieties of Tulip, and one to a pure white cup Daffodil. Several Medals were awarded to exhibits of cut Tulips.

In the afternoon there were elected to the privileges of the Society seventy new Fellows; and Mr. A. D. Hall, of Wye College, gave a discourse upon "The English Tulip."

The exhibition of the Royal National Tulip Society, held in the Drill Hall upon the same day, is reported below.

Floral Committee.

Present: W. Marshall, Esq., in the Chair; and Messrs. C. T. Drury, G. Nicholson, J. Hudson, C. R. Fielder, R. Wallace, C. Jeffries, F. Page-Roberts (Rev.), H. J. Cutbush, N. F. Barnes, C. E. Pearson, C. E. Shea, W. P. Thomson, E. H. Jenkins, W. J. James, C. Blick, W. Howe, C. Dixon, G. Gordon, and J. Jennings.

Messrs. W. CUTBUSH & SON, Highgate, London, N., had a fine group of plants of the yellow *Richardia Elliottiana* in flower, including upwards of fifty plants; also groups of the double-flowered Ghent Azaleas, Louis Van Houtte and Romain de Smet (Silver Banksian Medal). Messrs. W. CUTBUSH & SONS also showed a new bedding *Pelargonium*, Caroline Schmidt, with green and white variegated foliage and double flowers, colour bright scarlet; the habit of growth is apparently compact, and suitable for filling small beds.

Messrs. B. R. CANT & SONS, Colchester, exhibited a group of Roses in pots; there were numerous varieties in fine condition, the colours of the flowers being particularly good (Silver Flora Medal).

Messrs. W. PAUL & SON, Waltham Cross Nurseries, Herts, exhibited a group of pot Roses, including a new climbing China variety with large crimson flowers, named Field Marshal; also other climbing varieties, and standard and bush plants of several good exhibition varieties (Bronze Banksian Medal).

Messrs. R. & G. CUTHBERT, Southgate Nurseries, Middlesex, exhibited a variety of Carnation named Queen Alexandra; in colour the flowers were pale yellow and white, and only slightly fragrant; the bloom and calyx were similar to the Souvenir de la Malmaison type, and of large size, but the foliage was rot.

Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley, exhibited a large collection of sprays of some

of the choicer species of flowering trees and shrubs. Varieties of *Pyrus* were conspicuous, and of the *Malus* section the varieties *atro-sanguinea* and *Scheideckeri*; *Berberis stenophylla*, *Exochorda grandiflora*, *Ledum latifolium*, *Kalmia glauca*, and other species were noticed (Bronze Flora Medal).

Messrs. T. S. WARE, LTD., Hale Farm Nurseries, Feltham, London, exhibited a group of hardy flowers and plants, in which were noticed *Incarvillea Delavayi*, *Irises*, *Sarracenia purpurea*, *Primula Sieboldi* in variety, *Cypripedium calceolus*, *Gentiana verna*, &c. (Bronze Banksian Medal).

Mr. E. POTTER, Camden Nursery, Cranbrook, Kent, exhibited some plants of a very fine form of *Trollius europæus*, with large, bold flowers; also *Spiræa chamaedrifolia*.

Herbaceous *Calceolarias* were grandly shown by Messrs. J. JAMES & SON, Woodside, Farnham Royal. Some of the plants were in 10-inch pots, others in 7-inch pots; all were examples of the highest cultivation, and the flowers in colour and size were excellent (Silver-gilt Banksian Medal).

A fine new yellow *Viola* was shown by Messrs. G. STARK & SON, Great Ryburgh, Norfolk, who had plants growing in a pan, in addition to a quantity of cut blooms. The variety is called *Royal Sovereign*, and is wholly yellow, the eye included. It would make an effective plant for beds, and will be tried at Chiswick.

Mr. M. PRITCHARD, Christchurch Nurseries, Hants, had a very gay exhibit of hardy flowers, including a considerable number of *Tulips*, *Iris florentina*, *I. atrovirens*, *Saxifraga granulata plena*, *Scilla nutans*, with blue, white, and rose-coloured flowers, &c. (Silver Flora Medal).

Mr. J. RUSSELL, of the Richmond Nurseries, Richmond, Surrey, showed a floor group of stove plants of varying height, from 1 foot to 7 feet. This group consisted of *Codiaeums*, fairly well coloured for so sunless a spring; nice plants of *Pandanus Veitchii*, of *Aralia elegantissima*, *Dracæna Sanderiana*, *D. Russelliana*, a plant having bronze-coloured foliage, valuable for the sake of contrast with the green-leaved varieties; *D. Lindenii*, *D. Doucetti*, *Livistona rotundifolia*, a pretty, squat young example, although when of full dimensions it is a plant about 40 feet high, and the leaf petioles are 7 feet long; *Phyllanthus nivosus*, *Phrynium variegatum*, various *Caladiums*, and *Alocasias*, including *A. Thibautiana*, a plant having leaves with broad white ribs on a dark green ground; *Eurya latifolia variegata*, numerous ornamental-leaved *Begonias*, and a border to the group of plants of *Caladium argyrites* (Bronze Banksian Medal).

Mr. R. DEAN, Ealing, showed an exceedingly fine white centred alpine *Auricula*.

Mr. A. K. BULLEY, Neston, Cheshire, exhibited a flowering plant of the hardy perennial *Rehmannia glutinosa*, figured in *Gardeners' Chronicle*, August 9, 1890, p. 157.

Awards.

Carnation Duchess of Westminster.—A very pretty full-flowered variety of the *Souvenir de la Malmaison* type. Colour bright salmon-rose, varying in its shade. From the Duke of WESTMINSTER, Eaton Hall, Chester (gr., Mr. N. F. Barnes) (Award of Merit).

Iris Barnumæ.—This is a new species of *Onocyclus* *Iris* from Persia, shown by Mr. T. S. WARE, Ltd., Feltham. The flower was about 11 inches high, and the rounded standards very bright (royal) purple in colour, with deep violet veining. The falls were blackish-purple, and the base green, with numerous short hairs, the tips of which were also purple; the leaves were short and very narrow (Award of Merit).

Rose Dorothy Perkins.—A *Wichuriana* hybrid with very bright pink flowers 2 inches across, with pure white centre. The leaves are small, bright green, and glossy; and the flowers are produced in large bunches. A very beautiful variety. From Mr. E. POTTER, Cranbrook (Award of Merit).

Narcissus Committee.

Present: H. B. May, Esq. (Chairman); and Messrs. A. Kingsmill, J. D. Pearson, J. T. Bennett-Poë, G. Renthe, R. Dean, J. Walker, W. Ponpart, W. T. Ware, C. Scrase Dickens, A. D. Hall, and J. Boscawen.

Tulips were adjudged by this sub-committee, and of these flowers Messrs. BARR & SONS, King Street, Covent Garden, showed extensively cut blooms in glasses. The exhibit was especially rich in unbroken (Darwin) varieties in crimson of various shades, rose, blush, scarlet, orange-scarlet, and bronze, every variety being under name. The flowers were furnished with very stout long stalks, and seemed to have felt the unseasonable weather but little. They were grown in the nursery at Ditton, Surrey. These

unbroken *Tulips*, often of dull shades of colour, appeared to find many admirers among the visitors to the Hall. Another part of Messrs. BARR & SONS' exhibit consisted of a large number of broken florists' *Tulips* under name. Very handsome in colour were Dr. Hardy, Lord Stanley, Colbert, Mabel, James Wild, Stockhart, Large Yellow, and *Crimson Beauty*, Parrot varieties; *T. viridiflora*, yellow self Mrs. Moon, *Vitelina*, of a pale primrose tint and fine, large form; *Cygnets*, white. Some varieties, whether raised on the Continent or in this country we could not learn, were shown for certificates. We noted among this batch *Tulipa Gesneriana pallida lutea*, yellow; *Queen Alexandra*, of a rich yellow tint, and globular shape; *Goldfinder*, of the same shape as the last-named, and colour of deep crimson tint; *Aurantiaca*, an orange-scarlet bloom; and *Cyclops*, of a true scarlet tint. Messrs. BARR & SONS secured for their entire exhibit a Silver-gilt Flora Medal.

Messrs. HOGG & ROBERTSON, 22, Mary Street, Dublin, showed a very large exhibit of *Tulips*, including "Darwin," "Cottage Garden," or May-flowering *Tulips*, Parrot *Tulips*, and varieties of species. Altogether there were 130 varieties. The flowers were good, bold specimens, but bore evidence of the extremely bad weather prevalent recently (Silver Flora Medal).

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, Chelsea, exhibited a collection of *Tulip* flowers, with *Adiantum* Ferns interspersed with them to foil the brilliant colours. Like most of the other collections, the varieties represented the Parrot section, late-flowering *Tulips*, and varieties of species of *Tulipa*. The collection was very bright, and the flowers good (Silver Flora Medal).

Messrs. R. H. BATH, LTD., the Floral Farms, Wisbech, had a very pretty collection of *Tulips*, in which were many choice varieties of late-flowering and other sections (Silver Banksian Medal).

Awards.

Narcissus Agnes Harvey.—A pure white cup *Daffodil*, of pleasing outline. From Miss SPURRELL, Bessingham Haaworth, Middlesex (Award of Merit).

Tulip Inglecombe Scarlet.—A very brilliant scarlet *Tulip*, of large size, and having a purple blotch at the base. From Messrs. W. T. WARE, LTD., Bath (Award of Merit).

Tulip Scarlet Emperor.—A fine robust flower, of excellent shape, and pure tint. From Messrs. BARR & SONS (Award of Merit).

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), de B. Crawshaw, H. M. Pollett, H. Ballantine, W. Cobb, J. Douglas, W. A. Bilbey, G. F. Moore, E. Hill, H. J. Chapman, W. Boxall, W. H. Young, W. H. White, H. Little, and H. A. Tracy.

Again there was a fine display of *Orchids*, the chief award, the coveted Gold Medal, justly going to Sir TREVOR LAWRENCE, Bart., Burford (gr., Mr. W. H. White), for a splendid group some 30 feet in length, and replete with rare hybrids, species, and varieties, all finely grown, the many forms of the favourite *Odontoglossum crispum* especially showing the effects of high cultivation over a number of years, some of the large masses each bearing from two to four fine spikes of flowers. Of hybrid *Odontoglossums* there were several forms of *O. × excellens*, *O. × Mulus* and others. The *Masdevallias* made a brilliant show, the scarlet-tinted plants of *M. ignea*, bearing each from eighteen to twenty flowers. *M. × Gairiana*, orange-scarlet, seven; *M. Ellisiana* thirteen, and some of the forms of *M. coccinea* about twenty flowers. A noble form of *Cattleya Mossiae* had eighteen flowers; a dark coloured *Lælio-Cattleya × callistoglossa*, a fine spike of four blooms. *Miltonia vexillaria* six spikes, and some grand specimens of *Cypripediums*, beautiful in flower, as in foliage, were heavily bloomed. Other subjects noted were a large specimen of *Aërides affine* with four spikes; a still larger *Aërides Houlettianum*; the beautiful white and violet *Epidendrum Andresii*, one of the parents used in the large number of pretty hybrids of its section, some of which were represented; the pretty *E. Ellisii*, and the singular looking lilac-rose tinted *Epi-Cattleya × radiato-Bowringiana*, *Lælio-Cattleya × Highburyense*, *L.-C. × Lady Miller*, *L.-C. × Sunrise*, a clear yellow hybrid probably of *Lælia flava × C. Gaskelliana*; some pretty *Dendrobiums*, and good *Lælia purpurata*, *Brassia brachiata*, &c.

H. T. PITT, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood), was awarded a Silver-gilt Flora Medal, for a very fine group in which his favourite forms of

Odontoglossum crispum were, as usual, well represented, the best of them being very finely blotched, and included *O. c. "Painted Beauty," O. c. "Lady Bird," O. c. "Guy Paxton,"* and some good unnamed forms. Among others the clear white *Odontoglossum citrosum album*, the fine *O. × Adriane sceptre*, *O. crispum Purity*, and some good *O. Pescatorei* were noted; also *Cypripedium callosum Sanderæ*, *C. × Euryale*, several fine *Miltonia vexillaria*, of which the very large *M. v. gigantea* was the best; *M. Roezlii*, and its pure white variety; the bearded-lipped *Chondrorhyncha Chestertonii*, *Batemaniana Wallisii*, *Bulbophyllum Lobbi*, with a dozen flowers; *Anguloa Clowesii*, *Dendrobium Dearei*, and other *Dendrobiums*; a number of good *Cattleya Mossiae* and *C. Mendeli*, two remarkable forms of the latter being *Rosslyn* variety, with a large flower having a rich crimson-purple lip; and *Blue Beard*, a fine white form with a delicate bluish-pink front to the lip. Other good plants were *Oncidium ampliatum*, *O. macranthum*, *O. maculatum*, and the white *Cattleya intermedia Rosslyn* variety.

Messrs. JAS. VEITCH & SONS, Chelsea, were awarded a Silver Flora Medal for an attractive group, in the centre of which were numbers of their orange-scarlet coloured hybrid *Lælia × Latona*. With them were *L.-C. × Cybele*, *L.-C. × Hyeana*, *L.-C. × Aphrodite Eudora*, *L.-C. × Ascania*, *L.-C. × Zephyra*; two specimens of their new rosy-lilac *Disa × Luna*, a group of ten forms of the pretty *Epidendrum × elegantulum*, and a novelty in *Cypripediums* in *C. × Menas* (*Chamberlainianum × Lathamianum*), with shining yellow, bronze-tinted flowers. Of better known varieties were *Cypripedium × Goweri magnificum*, *C. × Vipani superbum*, a fine selection of *Cattleya Schroderæ*, *C. Mossiae*, *C. Mendeli*, *Lælia purpurata*, *Oncidium sarcodes*, *O. Marshallianum*, &c.

NORMAN C. COOKSON, Esq., Oakwood, Wylam (gr., Mr. H. J. Chapman), was adjudged a Silver Flora Medal for a very interesting group in which his hybrid *Phaius* were conspicuous. Among them were *P. × Norman*, *P. × Cooksoniae*, *P. × Phœbe*, *P. × Oakwood iensis*, *P. × Ruby*, and *P. × Phœbe superbus*, the two last getting Awards of Merit. Among the *Odontoglossums* were *O. × Andersonianum Cooksoni*, which received a First-class Certificate two years ago; some good *O. crispum*, one of which was profusely spotted with purple; a fine white *O. crispum Lehmanni*, whose flowers have a certain resemblance to *O. Pescatorei*; also a pretty spotted form of it. A large clear white *O. Pescatorei*, the singular hybrid *O. × dieranophorum*, *Cattleya × Harold*, *Cypripedium × Youngianum superbum*, *C. × W. R. Lee*, &c.

The Hon. WALTER ROTHSCHILD, Tring Park, was awarded a Silver Flora Medal for a very remarkable group of *Masdevallias*, in which the showy and the singular insect-like species, and the hybrids were represented. Of the showier species were the brilliant crimson-scarlet tinted *M. × Fraseri*, *M. Lindenii*, *M. Veitchiana*, and *M. coccinea* varieties. Of remarkable species there were *M. Bonplandii*, with thirty flowers; *M. Ehippium*, with curiously inflated claret and yellow blooms; *M. Chimera*, the nearly-black *M. Roezlii*, the downy *M. severa*, *M. bella*, *M. Houtteana*, *M. radiosa*, *M. × Courtauldiana*, *M. × Henriette*, *M. Schlimii*, *M. × Cassiope*, &c. Of the singular-looking miniature species were the mossy-stemmed *M. muscosa*, with a curiously hinged lip; the pretty *M. O'Brieniana*, and others of low growth. Together with these were *Fluoranthallis macrolepharis*, having sprays of flowers like large guats; the curiously-fringed *P. ornata*, the pretty *P. Grobyi*, and a finely-coloured *Lælio-Cattleya × Hyeana*.

R. I. MEASURES, Esq., Camberwell (gr., Mr. J. Smith), staged a group of very fine forms of *Cattleya Schroderæ* and *Lælia purpurata*, including *L. p. Kromeri*, white, with a few purple lines on the lip.

W. P. BURKINSHAW, Esq., Hesse, Hull (gr., Mr. Barker), showed the pretty blush-white *Cattleya Mendeli leucoglossa*, "Hesse variety."

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr., Mr. Gilbert), showed a very fine form of *Lælia cinnabrosa*, with reddish-orange-scarlet flowers and purple lip.

Mrs. BLACKWELL, The Highlands, Minchinhampton (gr., Mr. J. F. Wilkinson), showed good specimens of *Lælia purpurata*, and crosses between *Cypripedium Chamberlainianum* and *villosum*.

D. M. GRIMSDALE, Esq., Kent Lodge, Uxbridge (gr., Mr. Hooker), showed a good selection of *Odontoglossum crispum*, a plant of a very large form of *O. Pescatorei*, *O. citrosum*, *O. cordatum*, and good plants of *Cattleya Schilleriana*.

G. W. BIRD, Esq., West Wickham (gr., Mr. Redden), showed some good *Odontoglossum crispum*, &c.

DREWETT O. DREWETT, Esq., Riding-Mill-on-Tyne, sent a flower of a hybrid *Cypripedium*, probably between *Parishi* and *Lowii*.

DE B. CRAWSHAY, Esq., Rosefield (gr., Mr. Stables), showed the beautifully blotched *Odontoglossum crispum* *Crawshayanum*, and the still more handsome *O. c. Raymond* *Crawshay*, both previously certificated.

Awards.

FIRST-CLASS CERTIFICATE.

Odontoglossum × *Adrianæ Sibyl*, from Captain G. L. HOLFORD, C.I.E., Westonbirt (gr., Mr. Alexander).—A noble hybrid, but very puzzling to classify. The large flowers have the segments of firm, wax like substance, and flatly arranged, very different from the well known incurved form of *O. × Adrianæ*. Viewed without regard to the lip, the flower has the appearance of a fine *O. × Loochristiense*, and the central blotch of brown on the lip bears out the similarity, though the crimping and fimbriation of its margin is that of *O. × Adrianæ*. The broad sepals are of a canary-yellow tint, with very heavy transverse markings of brown; petals broad and fringed, yellow, with a number of red-brown blotches, all the segments having whitish bases; lip crimped and fringed, white, with one large and some smaller brown blotches.

AWARDS OF MERIT.

Cypripedium Lawrenceanum Hackbridge, from Sir TREVOR LAWRENCE, Bart., and H. T. PITT, Esq.—One of the finest in colour, and of good size and shape. Upper sepal of a bright magenta-rose colour with a little white on the upper margin, and a number of dark chocolate-purple lines from the base; the rest of the flower tinged with reddish-purple, even to the staminode.

Odontoglossum × *Adrianæ Cooksoni*, from NORMAN C. COOKSON, Esq., Oakwood.—A remarkably fine form of the true type, with broad, cream-white sepals, and petals evenly blotched over their entire surface with brown; lip finely fringed and crimped, white with fine brown spotting and yellow crest.

Phaius × *Ruby* (*Cooksoniæ* × *Humboldtii*), from NORMAN C. COOKSON, Esq.—Rich in colour and distinct in form. Sepals and petals purplish-rose; lip, claret-purple, with yellow crest and veining.

Phaius × *Phoebe superbus* (*Sanderianus* × *Humboldtii*), from NORMAN C. COOKSON, Esq.—Sepals and petals light rose, with a yellowish hue; lip purple and rose, with yellow crest.

Odontoglossum crispum "Lady of the Lake," from H. T. PITT, Esq.—Flowers large, white, tinged with purple, and bearing showily arranged dark purple markings.

Odontoglossum crispum "Marjorie," from RICHARD ASHWORTH, Esq., Ashlands, Newchurch, near Manchester (gr., Mr. Pidsley).—A very remarkable form very near to *O. c. Lowii*, and in the same section as *O. c. "Oakfield Sunrise"* and "Lady Jane," though with much broader, slightly concave, oval-bladed petals. Flower white, spotted with purple, the marking on the petals following the line of the margin.

BOTANICAL CERTIFICATE.

Epidendrum Schomburgkii, from Sir TREVOR LAWRENCE, Bart. A rare and handsome species from Guiana. The plant has fine, orange-scarlet flowers, with the labellum of a lighter tint and deeply divided. The general aspect of the heads of bloom is that of the well-known *E. radicans*, but the stems are erect and self-supporting, and not slender, as in that species.

Fruit and Vegetable Committee.

Present: Joseph Cheal, Esq., in the chair; and Messrs. Geo. Woodward, W. Bates, S. Mortimer, A. Dean, Ed. Beckett, Geo. Keli, H. Eslings, H. J. Wright, G. Norman, J. Willard, G. T. Miles, and G. Reynolds.

Strawberry Royal Sovereign was well shown by Miss ADAMSON, South Villa, Regent's Park (gr., Mr. Geo. Keli), who had a box of good-sized, well-coloured fruits, and was awarded a Cultural Commendation.

Messrs. T. RIVERS & SON, Sawbridgeworth, Herts, exhibited fruits of two new Peaches, Prince Edward, and Duchess of Cornwall, in addition to the variety mentioned under "Awards." Prince Edward as shown was of moderate size and colour, and Duchess of Cornwall much paler. Duchess of Cornwall was given an Award of Merit in June last year. Messrs. RIVERS & SON also showed fifteen fine fruits of their first-class Nectarine Cardinal (Cultural Commendation).

A dozen highly coloured, moderate sized fruits of Cardinal Nectarine was shown also by LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton (gr., Mr. J. Hudson). These were Culturally Commended.

AWARD OF MERIT.

Peach Duke of York.—A pretty, well coloured Peach of moderate size, of excellent flavour, and said to ripen as early as Alexander. It was obtained from Early Rivers Nectarine crossed with Alexander Peach, and does not cast its buds like the latter American variety. From Messrs. T. RIVERS & SON, Sawbridgeworth, Herts.

The Lecture.

THE ENGLISH TULIP.

In the afternoon a lecture was given by Mr. A. D. HALL, Principal of Wye College, Kent, and Secretary of the Royal National Tulip Society, upon "The Origin and Properties of the English Tulip." Mr. Hall briefly referred to the discovery of the Tulip in Turkey in the sixteenth century, where it was very commonly cultivated at that time, and to its subsequent introduction to Western Europe. After mentioning that the present race of florists' Tulips had been said to have been derived from *Tulipa Gesneriana*, and saying that there are various characteristics in English Tulips, in colour, scent, &c., that are not possessed by *T. Gesneriana*, the lecturer declared the question of the actual source of the florists' strain to be insoluble. Very brief reference was made to the gambling connected with the bulbs during the early history of the Tulip in England and Holland, but the work of the old London florists who founded the race and standard of the English Tulip, particularly during the years from 1820 to 1850, was the subject of appreciative remark.

Then was explained something of the properties of these Tulips, and the fact that a seedling or unbroken Tulip is always a self coloured flower; that after ten, fifteen, or even twenty years, it will "break," and the colour upon the flowers become condensed into the margins of the segments, or the margins and centre.

A Tulip must have a white or yellow base before a florist will recognise it. Those with purple bases are discarded. Then of those with white or yellow bases, only those that have the bases very pure in colour, and the segments wide with rounded tips are selected, so that the top of the flower resembles the top of a round cup. Mr. Hall briefly described the classification of "rectified" Tulips into bizarres, roses, and byblémens. Bizarres have a yellow base, roses a white base and rose markings, and byblémens white base with purple or violet markings. These are all again divided into "feathered" and "flamed" flowers. A feathered flower has the markings confined to the margins of the segments, and a flamed flower in addition has a "beam" of colour in the centre of the segments.

In respect to cultivation, Mr. Hall advised that the bulbs should be planted 3 to 4 inches deep in poor but well-mixed and well-drained soil. Sir the surface of the soil during the time the plants are growing, and if the month of April be very dry, afford the plants water occasionally. Just before the flowers commence to open, they need to be protected from hailstorms and severe weather by placing a few lights over the beds, leaving the sides more or less open.

The lecturer concluded with an appeal to amateurs to cultivate English Tulips. He defended the florists' arbitrary laws as to what a proper Tulip flower should be, and said that their cultivation would afford amateurs more pleasure, more interest, and more excitement than any other flower that can be grown with limited conveniences.

ROYAL NATIONAL TULIP.

MAY 20.—That the late cold, retarding season, with its succession of frosts, cutting winds, hailstorms, and the absence of warm sunshine greatly affected the blooms of the florists' Tulips which were staged in competition for the prizes offered by the National Tulip Society, there can be no doubt. The flowers were small, and difficultly had no doubt been experienced in getting some of them sufficiently into bloom; as it is, the main of the blooms staged were of southern growth. The northern exhibitors depend upon flowers grown at Llandudno, which answers to our southern climate. Still, there is sufficient of the old floral enthusiasm to get a very creditable show together, and the flowers were much more numerous than we had expected to see them. Staged in the formal way the blooms are, they were then at a decided disadvantage compared with the huge displays of the various sections made by Messrs. VITCH & SON, HOGG & ROBERTSON, BARR & SONS, and others. But these refined florists' varieties bear inspection, as they have rich markings, while the self-coloured breeder forms are in most cases single, early, rich and striking. In all the many forms of late Tulips now being exhibited, it would be difficult to find one that can compare with the beautiful bizarre breeder Goldfinder as it was seen on this occasion.

Rectified or Broken Tulips.—There were four stands of twelve dissimilar rectified Tulips, two feathered and two flamed in each class; and Mr. A. D. HALL, The

College, Wye, Kent, was placed 1st, having of bizarres, Masterpiece and Garibaldi, feathered; and Sir J. Paxton and Dr. Hardy, flamed; of byblémens: Trip to Stockport and Bessie, feathered; Chancellor and Duchess of Sutherland, flamed; of roses: Mabel and Comte de Vergennes, feathered; Mabel and Annie McGregor, flamed. Mr. C. W. NEEDHAM, Hafe, Cheshire, was 2nd; he had of bizarres: Sulphur and Masterpiece, feathered; Samuel Barlow and Sir J. Paxton, flamed; of byblémens: Bessie and Adonis, feathered; Caruncle and Talisman, flamed; of roses: Andromeda and one other, feathered; Mabel and Annie McGregor, flamed. Mr. J. W. BENTLEY, Stoke Hill, Manchester, was 3rd.

With six dissimilar Tulips, one feathered and one flamed of each class, Mr. C. W. NEEDHAM, was 1st, with bizarre, feathered Magnum Bonum, and flamed Sir J. Paxton; byblémens, feathered Bessie, and flamed, Caruncle; rose, feathered Comte de Vergennes, and flamed Annie McGregor. Mr. A. D. HALL came 2nd; he had of bizarre, feathered Sir J. Paxton, and flamed, Lord Stanley; byblémens, feathered Wm. Parkinson, and flamed, Caruncle; rose, feathered Modesty, and flamed Annie McGregor. Mr. J. W. BENTLEY was 3rd.

Mr. G. EDMON, Headley, Surrey, was placed 1st with three feathered Tulips. He had bizarre, Lord Frederick Cavendish, byblémens unknown, and rose, Comte de Vergennes. Mr. A. D. HALL came 2nd; he had bizarre, George Hayward, byblémens, Guido, heavily feathered, or what is technically known as a plated edge; and rose, Modesty; Mr. C. W. NEEDHAM was 3rd.

With three dissimilar flamed, one of each class, Mr. A. D. HALL came 1st with bizarre, Samuel Barlow, byblémens, King of the Universe, and rose Aglaia; 2nd, Mr. J. W. BENTLEY, with bizarre, Sir J. Paxton, byblémens, Chancellor, and rose, Annie McGregor; 3rd, Mr. C. W. NEEDHAM.

The awards ran as follows:—

Single Blooms.—Feathered bizarre, 1st, Lord F. Cavendish, from Mr. G. EDMON; 2nd, Duke of Edinburgh; 3rd, Sir J. Paxton, both from Mr. A. D. HALL. Flamed bizarre, 1st, Sir J. Paxton, from Mr. A. D. HALL; 2nd, Excelsior, Mr. C. W. NEEDHAM; 3rd, San Jo, Mr. J. W. BENTLEY. Feathered byblémens, 1st, Trip to Stockport, Mr. C. W. NEEDHAM; 2nd, the same, Mr. G. EDMON; 3rd, Bienfait, Mr. C. W. NEEDHAM. Flamed byblémens, 1st, George Edward, Mr. A. D. HALL; 2nd, David Jackson, Mr. C. W. NEEDHAM; 3rd, Trip to Stockport, Mr. J. W. BENTLEY.

Certain classes were set apart for the growers of small collections, the limit being not fewer than 400 blooming bulbs with six dissimilar rectified Tulips, two of each class. Mr. W. PETERS, Cambridge, was 1st. He had of bizarres, feathered, Masterpiece, and flamed, William Wilson, byblémens feathered Bessie, and flamed, Mrs. Jackson; roses, feathered, Sarah Headly, and flamed, Aglaia. Mr. PERCIVAL was 2nd. The latter took the 1st prize with three feathered blooms, they were unnamed; and Mr. PETERS was 2nd. Mr. PERCIVAL was also 1st with three unnamed flamed flowers, and Mr. W. C. BULL was 2nd. The same exhibitors were 1st and 2nd with three dissimilar breeder Tulips, and the Silver Medal for two rectified Tulips went to Mr. PERCIVAL, who had bizarres Lord Stanley and Masterpiece.

The premier flamed rectified Tulip was byblémens, Duchess of Sutherland, shown by Mr. A. D. HALL, in his stand of twelve varieties. The premier feathered byblémens, Trip to Stockport, shown by Mr. C. W. NEEDHAM. The premier was bizarre Goldfinder, a brilliant crimson, shown by Mr. A. D. HALL.

Breeder Tulips.—Some very bright blooms of these were staged, though, like the broken flowers, generally they were undersized. With six dissimilar blooms, two of each class, Mr. A. D. HALL was 1st with bizarres Sir J. Paxton and Goldfinder; byblémens, Seedling and Elizabeth Pegg; roses, Mabel and Annie McGregor. Mr. J. W. BENTLEY was 2nd; he had, of bizarres, Goldfinder and Alfred Lloyd; byblémens, Eliza Pegg and a purple seedling; roses, Queen of England and a seedling. Mr. C. W. NEEDHAM was 3rd.

With three blooms, one of each class, Mr. A. D. HALL was 1st. He had bizarre Goldfinder, byblémens, Aglaia, and rose Loveliness; Mr. C. W. NEEDHAM came 2nd. He had bizarre Storer's Seedling, rose Lady C. Grosvenor, and byblémens, Ashinoles 124.

Single blooms of breeders: bizarre, 1st, Sulphur, from Mr. A. D. HALL; 2nd, Goldfinder, Mr. G. EDMON; 3rd, Sir J. Paxton, Mr. A. D. HALL. Byblémens: 1st, Bridesmaid, Mr. C. W. NEEDHAM; 2nd, Elizabeth Pegg, Mr. A. D. HALL; 3rd, Adonis, from the same. Roses: 1st, Annie McGregor, Mr. A. D. HALL; and he was 2nd with Loveliness, and 3rd with Storer's 220.

MANCHESTER ROYAL BOTANICAL AND HORTICULTURAL.

MAY 17-22.—It was fortunate that Mr. P. Weathers, the energetic Curator of the Royal Botanical Gardens, included in the Whitsuntide exhibition the exhibits of members of the North of England Orchid Society, otherwise the show would have been rather less than on previous occasions. Several former exhibitors were absent this year, but that did not prevent a fine display taking place, Orchids of course being in the ascendant, so much so that the large exhibition-house was ablaze with gorgeous colouring.

ORCHID GROUPS.

The class for a group (Nurserymen), was won by Mr. J. CYPHER, of Cheltenham. The forefront looked cool, with its covering of green moss and dwarf Ferns, out of which arose quite a forest of spikes of *Odontoglossums* of every conceivable hue and variety, the background being completely filled with *Oncidium* *Marshallianum*, *varicosum*, *Rogersii*, and perfectly flowered *Laelias*. Mr. J. ROBINSON, Altrincham, gained the 2nd prize. In the amateurs section Mr. E. ASHWORTH (gr., Mr. H. Holbrook), Harefield Hall, Wilmslow, quite excelled himself in every respect. His exhibit included the chief species in cultivation, and such novelties as *Cypripedium* *Mrs. A. W. Sutton*, *Chamberlainianum* *x niveum*, F.C.C., carrying a fine branching spike. The blue-flowered *Dendrobium* *Victoria Regina* was represented by two fine pans; *Cattleyas* *Schroderae*, *Mossiae*, and *Mendeli*, and *Laelia purpurata* were beautiful to a degree. Mr. W. DUCKWORTH, Flixton, was a moderate 2nd; and Mr. W. E. WATSON, Stretford, 3rd.

For ten *Laelias* and *Cattleyas*, Mr. CYPHER again led the way, *Laelia purpurata* *magnifica*, *Cattleyas* *Mendeli*, *superba*, and *dolosa*, looking the best. Mr. CYPHER also secured the class for ten specimen Orchids with *Dendrobium* *nobile nobiliss*, *Cattleya Mendeli* *superba*, *Cypripedium grande* (*atratum*), and *Cattleya Skinner* as the most conspicuous.

Mr. J. ROBINSON was the only exhibitor of ten *Odontoglossums*, a class that was formerly the pride of the show.

GROUPS OF PLANTS FOR EFFECT.

In the nurserymen's section, for a group occupying 200 square feet, the place of honour was justly occupied by Messrs. R. P. KER & SONS, Aigburth Nursery, Liverpool, for an arrangement which left nothing to be desired. It formed a series of glades, in which foliage and flowering plants were interspersed with a singularly pleasing effect.

The corresponding group in the amateurs' class was taken by Mr. WATSON BAXTER, admirable in arrangement, the elegance of the Bamboos calling for much comment. The Earl of ELLESMERE, Worsley Hall (gr., Mr. W. Upjohn), was a capital 2nd; and Mr. T. HARKER (gr., Mr. T. Mullay), Didsbury, 3rd.

In the class for a group upon a space of 100 feet, it was most refreshing to see how *Crimson Rambler* *Rose* and *Dentzia gracilis*, in conjunction with Ferns and several *Crotons* in skilful hands could be made so effective. Mr. J. BROWN (gr., J. Smith), Heaton Mersey, was the winner.

PLANTS IN POTS.

Mr. J. CYPHER was again the winner of the 1st prize for ten stove and greenhouse plants in flower. *Ericas* *verticillata*, *magnifica*, and *Cavendishii*, finely grown *Anthuriums*, *Pimelia spectabilis*, and *Hederoma tulipifera*, were superbly cultivated. The prizes for a group of six foliage and six exotic Ferns went to Messrs. J. LAMB and T. HARKER. Hardy Ferns were small but very choice. Messrs. DERBYSHIRE and LAMB were 1st in two classes. Herbaceous plants showed great improvement. Mr. J. LAMB was 1st for thirty and twelve. Twelve *Gloxinias*, 1st, Mr. T. HARKER; twelve *Calceolarias*, 1st, Mr. J. BROWN; twelve *Cinerarias*, 1st, Rev. F. CRONKLEHOLME, whose choice *C. cruenta* hybrids beat the ordinary forms. *Coleus*: 1st, Mr. J. BROWN; who also deserves high commendation for the superior collection of *Roses*, which gained 1st prize.

TRADE EXHIBITS.

Messrs. HUGH LOW & Co., Bush Hill Park, Enfield, staged a group which deserved much praise, and the *Metrosideros*, *Ericas*, *Pimelias*, *Tremandras*, delighted the older cultivators. A fine batch of the *Schizanthus Wisetonensis* created a surprise; Orchids too were superior (Award Gold Medal and First-class Certificate).

Messrs. CHARLESWORTH & Co., secured a Gold Medal for a splendid table of Orchids, and two First-class Certificates, viz., for *Odontoglossum crispum* "Gladys," a small plant carrying large flowers having pure white ground and heavy rich chocolate blotches; and for *Odontoglossum Pescatorei* "Charlesworthi," which with Mr. ASHWORTH's *Cypripedium* was most admired of all. It is a superb white ground flower, with deep violet-coloured spots. Four Awards of Merit were also given.

Messrs. JNO. COWAN & Co., Gateacre, Liverpool, put up some fine novelties in Orchids, which proved inviting to connoisseurs, gaining, besides the Gold Medal, an

Award of Merit for *Odontoglossum crispum* "King of Spain," with rich primrose markings and large maroon spots. A plant of *Cecylogne pandurata* was unusually fine.

The *Hippeastrums* from Messrs. R. P. KER & SONS, Aigburth, Liverpool, looked imposing in their bed of green moss. How brilliantly coloured they appeared on the shady bank! A Gold Medal was awarded for the display, and a First-class Certificate to "Goliath," an enormous red and white striped variety; "Magnificent," crimson, white tipped; and "Lady Rose Molyneux," soft rosy-pink.

Messrs. F. SANDER & Co. had a much smaller collection than usual, but there was no falling off in quality. *Odontoglossums* were the mainstay, and for the hybrid *Anthuriums* two First-class Certificates were awarded, a very dark one, Mr. T. M. Crook, was the best.

Messrs. JNO. WATERER & SONS, Ltd., of Bagshot, gained the Silver Medal for *Rhododendrons*.

Messrs. W. & J. BIRKENHEAD, of Sale, exhibited a collection of British Ferns.

Messrs. ALEX. DICKSON & SONS, Newtownards; Messrs. BARR & SONS, London; and Messrs. DICKSON & ROBINSON, Manchester, were each awarded a Silver Medal for a fine display of Tulips.

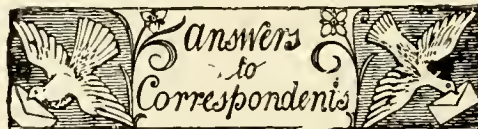
Out-of-doors there was a great display of garden sundries, but the weather on the opening day was inclement.

EALING HORTICULTURAL.

THE annual report and schedules of prizes for the two exhibitions held during the year has just been issued. The summer exhibition is fixed for July 9, and will take place in the grounds of Gunnersbury Park, Acton, the President being Mr. LEOPOLD DE ROTHSCHILD. *Roses* are a leading feature, for there are three classes open to all comers, viz., forty-eight blooms, but not more than two of one variety; twenty-four blooms in not fewer than eighteen varieties; and twelve blooms of *Teas* and *Noisettes*, distinct. The Chrysanthemum exhibition is fixed for November 5, and will take place as usual in the Town Hall. The Secretary is Mr. GEORGE CANNON, St. John's Nursery, Ealing.

WARGRAVE GARDENERS'

"Young Gardeners" was the title of a paper read at the last meeting of the above association, by Mr. J. Botley, gr. to the Rev. H. M. Wells, of Scarlets Park, Twyford, Berks. He traced the career of a young fellow in his "teens," entering a fair-sized garden, and showed how he might rise, step by step, to the top round of the gardening ladder and appear as a Head Gardener. To do this required ambition and strict attention to duty. He did not advocate too long a stay in one situation, as to gain experience the young gardener should move about, and above all things spend several years in the kitchen garden. On attaining the dignity of a foreman, he should set a good example to the men under him, and on reaching the last round of the ladder as a "Head," he would be able to show what he was worth, as the gardener not his employer has to "make" the garden. Several members related their experiences which showed the change for the better that has taken place in the last thirty years. Mr. Priest, gr. to P. Tarbutt, Esq., was awarded a Cultural Certificate for a splendid group of *Calceolarias*. H. Coleby, Hon. Sec.



*** EDITOR AND PUBLISHER.—Our correspondents would obviate delay in obtaining answers to their communications, and save 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, should be directed to the EDITOR. The two departments, publishing and editorial, are quite distinct, and much unnecessary delay and confusion arises when letters are misdirected.

ANTS IN GLASSHOUSES: E. H. P. The best remedy is the Ballikrain Ant Destroyer, sold by A. Cross & Sons, Ltd., 19, Hope Street, Glasgow.

BOOKS: Novice. *The English Flower Garden*, by W. Robinson. The publisher is J. Murray, Albemarle Street, Piccadilly, London, W. A recent edition has been published.

BULBS ON NEPHROLEPS TUBEROSA: *Rus-in-Urbe*. *N. tuberosa* is a synonym of *N. cordifolia*. It is a native of tropical America, and should rightly be afforded stove treatment. It is not unusual for it to bear tubers, but such large ones as those you describe are rarely found, and it is evidently quite at home in your greenhouse. We agree with Baines, in his *Greenhouse and Stove Plants*, in his division of what are stove and what greenhouse species.

CORRECTION.—The writer of the article on Mowing Machines, appearing in our last issue, wishes us to correct two mistakes made in the spelling, viz., Crawley & Sons should read Crowley, & Co., and their machine Victor, not Victa.

HYBRID CACTUS: *H. J. C.*, *Grimston*. A fine bloom of exceptional richness of crimson colouring, raised, as you tell us, from an angular spiny-stemmed *Cereus* and a white-flowered, flat-stemmed *Phyllocactus*, which latter in form of flower it much resembles. We are not able to compare it with others, and hence cannot definitely say if it is an improvement, it must suffice to say that we think very highly of it.

NAMES OF PLANTS: A. Hobbs. *Justicia carnea*. —H. H., *Darmstadt*. We fail to recognise the small *Oncidium* sent.—A. W. *Phyllocactus* *Emperor*. —C. R. *Ornithogalum nutans*. —G. B. 1, *Polystichum angulare*; 2, *Pteris serrulata cristata*; 3, *Pteris cretica alba-lineata*; 4, *Asparagus decumbens*; 5, *Selaginella caesia*. —R. W. R. *Ribes aureum*.

NON-FLOWERING OF TULIPS: J. C. The bulbs are attacked by *Botrytis vulgaris* in a very virulent form. The mycelium is abundant in fragments of the soil adhering to the bulbs. Remove and sterilise the soil in the bed, as the fungus attacks almost every kind of plant. G. M.

NOTICE TO QUIT EMPLOYMENT: *Constant Reader*. Yes, in the absence of any agreement to the contrary, a month's notice must be accepted and given.

ROSE BUDS: *Warwick*. The direct cause of the buds falling is that the tree has suffered a check, but the buds sent afford no indication whether the check has been due to insufficient or too liberal root-waterings, cold winds, severe fumigation, &c.

PALM UNHEALTHY: G. Burrows. The winter temperature should not be lower by night than 58° to 60°, and by day 70° or less; and at that season the supply of water at the root should be moderate, not withheld till the soil gets in a very dry state. The paleness of the leaf tint may be due to a temperature lower than this, to too much water at the root, or some other condition of which you must be the best judge. If the soil and drainage are in good order you might try an occasional dose of clear soot-water or a pinch or two of nitrate of soda.

THE TEMPLE GARDENS: H. H. These gardens are situated on the Victoria Embankment, about midway between Somerset House and Blackfriars Bridge. If you reach town via Victoria Station, you should take a ticket for the Temple Station, on the District Railway.

YOUNG GARDENER AGED 13 YEARS: E. H. M. We really consider that a strong lad with some slight knowledge of gardening is worth more than 1d. an hour and 2d. overtime. A fairer wage would be 2s. per day, out of which you might, as you reside with your parents, buy occasionally an elementary book on subjects bearing on your business.

COMMUNICATIONS RECEIVED.—Knight, Frank & Rutley. —O. T.—Baylor Hartland.—W. M.—R. D.—J. C.—F. B.—T. C.—Bair & Sons.—Joo Pentland.—T. H. Cook.—F. T.—H. L. J.—A. W.—J. McD.—A. Waterer.—T. L.—Kil.—Puzzled.—Pennick & Co.—F. W. B.—O. Thomas.—F. G. B.—W. P. Roberts.—F. J. C.—J. S.—H. W.—R. P. B.—C. R. F.—W. B. H.—R. D.—W. W.—A. S.—E. C.—F. G.—A. W.—T. P.—J. O'B.—R. H. W.—G. W.—T. C. (we had already published a report)—L. S.

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

SUPPLEMENT TO THE "GARDENERS' CHRONICLE," MAY 24 1902.



LÆLIO-CATTLEYA QUEEN ALEXANDRA.



THE Gardeners' Chronicle

No. 805.—SATURDAY, MAY 31, 1902.

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GARDEN DESIGN.*

"AS I am a landscape gardener and not an architect, I am afraid I may be looked upon as an outsider among the members of this Architectural Society. But, after all, our respective professions are at least closely related to each other, and I hail with delight this opportunity of comparing notes with you by means of friendly discussion.

Unfortunately, it is a fact that architects and landscape gardeners do not always work in harmony together. The architect who designs a handsome building and the landscape gardener or garden-architect who designs a garden, are generally both actuated by the very laudable desire of making the most of their profession. This is as it should be, and by working hand in hand, as it were, the work of one may be greatly facilitated and even enhanced by the work of the other. Sometimes, however, it happens that the architect who designed, say, a mansion, and superintended its erection, is not content with that, but also lays out not only the immediate surroundings of that mansion, but the whole of the grounds as

well. In ninety-nine cases out of a hundred such procedure must prove disastrous, unless the architect is also a specialist in horticulture. Designing a garden does not depend merely on the rules of architectural symmetry, or hard and fast rules of design.

Though in a large garden adjoining a mansion the immediate surroundings should, if at all possible, be in harmony with the style and character of the building; the principal, and the most pleasing effects of every garden can never be attained by stones, bricks and mortar, or any other dead material; but must in all cases depend on the living and ever changing materials of grass, shrubs, trees, flowers, &c., combined in such a way as to form a pleasing picture not only in themselves, but also as a whole, and should, if possible, amalgamate and blend harmoniously even with the landscape beyond the garden.

Without an intimate knowledge of trees, shrubs, and plants generally, no architect can design a good garden. His garden might look all right immediately after completion, but what will it be like say five or ten years hence, when the trees and shrubs have assumed larger proportions? The material of which a mansion is built changes neither in size or in shape, but the material of which a garden is composed changes both, and thus makes it necessary for the designer to look many years ahead.

I would most emphatically maintain that no good garden can be designed unless its designer possesses a thorough knowledge of the plants to be used, and the effect which they will produce not only immediately, but, say, ten years or more after the work is complete. Some few years ago I read a book on the subject of 'the Formal Garden,' written by an architect, and I was amazed to find in it a sentence to the following effect:—"For the designer of a garden it is no more necessary to know anything about plants than it is necessary for a bricklayer to know how his bricks were manufactured."

There is nothing to be said against a formal garden in the right place, but a formal garden, or any other other garden, arranged on such lines as those quoted above, that is to say without a knowledge of plants, can in my humble opinion be never anything else but an absurdity.

I would not have you suppose for one moment that I condemn formal gardening altogether. On the contrary, I am strongly in favour of giving small gardens a more or less regular shape; and also in large gardens I consider that the immediate surroundings of the house should be in keeping with the regular style of the house, and that the transition from the regular to the irregular style should be a gradual one.

Since the architect and the landscape-gardener necessarily look upon their respective work from entirely different standpoints, I think that it is only right and just that when a new garden is to be designed in conjunction with a new house, the architect and the landscape-gardener should compare notes and then work hand in hand. But for an architect alone to lay out a garden is, I think, as grave a mistake as it would be to employ a landscape gardener to design a cathedral.

To lay down hard-and-fast rules whether a garden should be in the geometrical, regular style, or in the natural style, is im-

possible. It is not merely a matter of taste, but must largely depend on existing circumstances, and especially on the surroundings. In most cases it will, of course, also be necessary to be guided to some extent by the taste and particular wishes of the owner, who has to pay for the work; but broadly speaking, I think, of modern gardens, the most pleasing ones are those which do not too rigidly adhere to either the geometrical or the natural style, but are a pleasing combination of both, and are above all in thorough harmony with their surroundings. The golden rule of the middle course applies to most things, and to gardens in particular. When a sudden change is introduced, there should be a visible motive, forming, as it were, a connecting link between the different styles, which would otherwise give the garden the appearance of being the property not of one man but of different owners. Not contraction within narrow limits but expansion must be our aim, and if by skilful treatment we can introduce an artificial perspective, a comparatively small garden may not only be made to appear much larger than it really is, but may be actually amalgamated with the distant landscape beyond, a result which in most cases will be found most satisfactory from every point of view."

The lecture was illustrated with a large number of lantern-slides, illustrative of various styles of gardens.

NEW OR NOTEWORTHY PLANTS.

RICHARDIA SPRENGERI, Comes.

THE seeds of this very fine Richardia were sent me in the winter of 1898, together with seeds of Richardia macrocarpa (Engler), and another species not yet flowering with me; it distinguished itself by growing very rapidly and strongly, whilst the other two or more species did not do so well. I planted the small, pot-grown tubers in February, 1899, in the open ground, at a good distance from each other, and they grew rapidly, so that I was surprised to see fifty or more seedlings in full bloom in the summer of 1900. The tubers still remain in their first place, and are never moved. In the summer of 1901 each tuber showed two or three large flowers, much finer than those of Richardia Pentlandi or R. Elliotiana. The crown you have received [?] was taken up the first year, when the blooms were yet small, and not as large as they are now. They are also very variable, so that I have varieties with nearly white flowers, others are golden-yellow, and others sulphur or pale yellow; sometimes also they are spotted. The foliage is larger than that described by Professor Comes. This Richardia is quite hardy with me. It comes up in April, flowers in June and July, and in September ripens many seeds; this, though the fruits are rather small, whilst the fruits of R. macrocarpa are the largest ever seen. The seed ripens on the surface of the ground, and it seems to me that the plant seeks to get them underground, as do Violas or Cyclamens, to protect them in the dry weather in hot summers. These seeds grow very easily, and I hope to obtain other varieties. I planted them in a mixture of volcanic lapilli, sand, peat, and manure from my Melon-garden, and gave them every week during the full vegetation gypsum, superphosphates, and Chilisalt-pot, as I do with all my Richardias. This very splendid Richardia, when better

* A lecture given on Thursday, April 24, 1902, at the Athenaeum, Exeter, before the members of the Devon and Exeter Architectural Society (in alliance with the Royal Institution of British Architects), by P. W. Meyer, landscape gardener to the firm of Robert Veitch and Son, of the Royal Nurseries, Exeter.

known, will certainly become a favourite with amateurs as well as with gardeners, especially for cut flowers, &c. The surface of the ground where they grow must be protected by covering it with old foliage, or preferably with stones. *C. Sprenger, Naples.*

CYPRIPEDIUM "BRUNHILD."

This is stated to be the result of a cross between *Cypripedium Victoria Maria* and *C. Lathamianum*. It was purchased from Messrs. Sander last year, and was lately in flower in the Orchid houses of Prince Lichtenstein, at Eisgrub, in Moravia. Professor Zimmermann sends us the accompanying sketch (fig. 118) and description—

"Leaves green, spotted with a darker shade along the veins above, and with purple beneath; length 6 to 8 inches, width 1 to 1½ inch. Flower-spike about 20 inches long, green, spotted with purple, and having violet-purple hairs. Ovary green, three-lobed, and having violet-purple hairs. Upper sepal ovate, heart-shaped and pointed, the sides reflexed and much undulate at the edge, reflexed at the back, and hairy over the whole surface. The colour is a clear emerald-green, here and there spotted with pale purplish-brown, and having a broad bluish rose-coloured stripe lengthwise down the centre. Lower sepal inclined towards the ovary, smaller, green, veined with apple-green, slightly hairy at the edge and back. Petal tongue-shaped, wavy and twisted, and with wavy curves at the edge; colour green, with brown spots, which are larger on the midrib than elsewhere. Lip slipper-shaped, green, in front and at the tip flushed with purple, the inner side less so, and finely spotted with purplish-brown. Staminode rhomboidal, purple, the centre stripe and the lower edge clear green. In the middle is an apple-green and oblong wart. Stalk of the staminode closely set with purple hairs. *H. Zimmermann, Eisgrub, Moravia.*"

SOME NEW SPECIES OF TULIPS FROM BOKHARA AND TRANS-CASPIA.

THE Messrs. Van Tubergen, of Haarlem, Holland, last year sent out a botanical collector to Bokhara, Central Asia, with the view of obtaining, if possible, a supply of bulbs and tubers from that far-off and as yet botanically but little-explored country. Considering the great number of beautiful new bulbs introduced into cultivation by the late Dr. Ed. Regel, of St. Petersburg, whose son Albert, about twenty-five years ago, was one of the first to send home tubers, seeds, and bulbs from that district, there was every reason to believe that a great stock of novelties still remained to be harvested, if one struck out a different route from that followed by Herr Albert Regel. Late in the autumn of last year the results of this expedition, consisting of many thousands of bulbs and tubers of every description, arrived in an excellent condition at Haarlem; and these are now coming into bloom in Messrs. Van Tubergen's nurseries. Moreover, there have been flowering this spring in these nurseries a great number of new and rare bulbs sent home by their collector from the steppes of Trans-Caspia (Turan) and the mountain range which divides that vast country from North Persia.

Sir M. Foster has kindly undertaken to name and describe the new species of Iris found, one of which, *I. Ewbankiana*, has already been figured in this paper (June 22, 1901). Two others, *I. Warleyensis* and *I. bucharica*, await their scientific description, but have already received First-class Certificates from the Royal Horticultural Society; these were exhibited by Miss Willmott, and will be shortly described and figured in these columns.

Having personally paid a special attention to the genus *Tulipa* for many years, besides having been enabled to study in a living state most of the *Tulip* species known in Messrs. Van Tubergen's nursery, where an unusually large number of species have been brought together, I believe I am justified in naming and describing hereunder as new species those of the Bokhara and Trans-Caspian Tulips which, after a careful investigation, have proved to be unknown ones.

Contrary to the conclusions arrived at by Mr. Elwes, I find that *Tulip* species perfectly retain their botanical characters in cultivation. Of course, there is the size of the bulbs, as well as of the foliage and of the flowers, that increase if cultivated in gardens, but changes in form, as that illustrated in this paper (May 22, 1880), cannot but be looked

somewhat in number and size. The remainder of botanical characters on which *Tulip* species are founded all remain perfectly intact under cultivation.

TULIPA NITIDA, spec. nova (fig. 119, p. 351).

Bulb small, ovoid, terminating into a long neck 1½ to 2 cm. in diameter. Bulb-coats brown, perfectly glabrous inside, save a few short adpressed hairs at base and at the top of the bulbs. Peduncle slender, very short, 5 to 7 cm. only in length, glabrous; leaves three, linear lanceolate, more or less falcate and channelled down the face, the lowest leaf 13 by 1½ cm., the upper 9 × ½ cm., glaucous, and not ciliated. Flower 4 cm. in length, campanulate, inner segments obovate, outer segments oval, ½ cm. shorter than the inner ones, colour of the flowers an intense and very

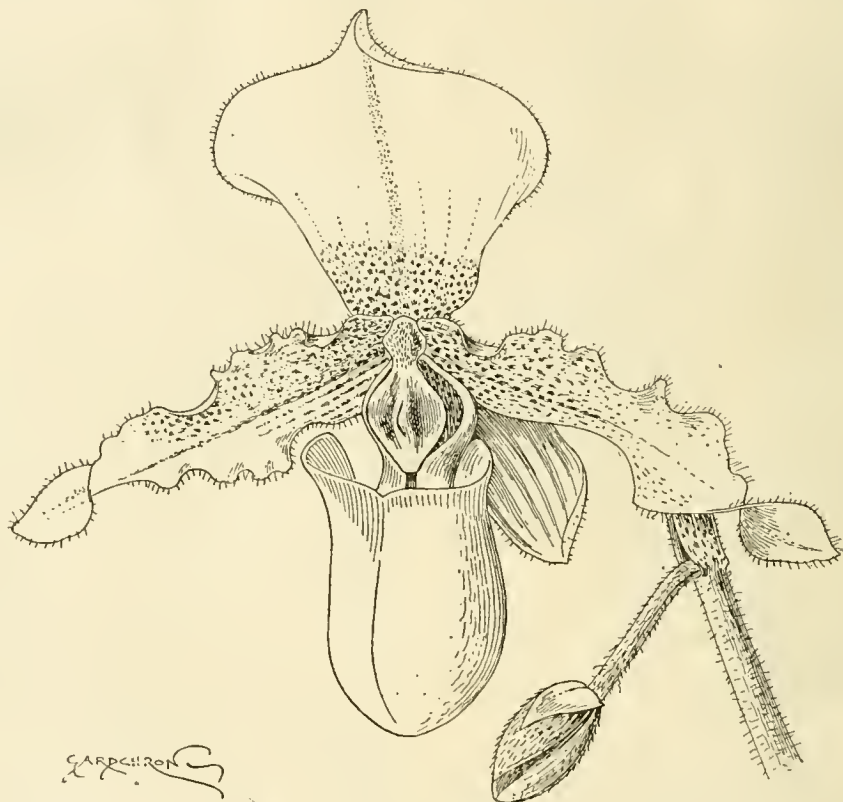


FIG. 118.—CYPRIPEDIUM "BRUNHILD": THE RESULT OF A CROSS BETWEEN *C. VICTORIA MARIA* AND *C. LATHAMIANUM*; EMERALD GREEN, SPECKLED WITH PURPLISH SPOTS.

upon with very sceptical eyes by anyone who has ever grown imported *Tulip* species for a consecutive number of years. In Messrs. Van Tubergen's establishment there are numerous specimens of *Tulipa Kolpakowskyana*, *Ostrowskyana*, and others, cultivated over a period of about twenty years, that were obtained as soon as Dr. Regel sent them out, and they prove to be identical in every respect, save of course size, with specimens grown from imported bulbs obtained by Messrs. Van Tubergen from Eastern Turkestan two or three years ago. The only change that cultivation will produce in *Tulip* species that I have been able to find out is in the thickness of the layer of hairs with which the innerside of the outer bulb coats of some *Tulipas* is clothed. No doubt these hairs serve as a protection of the bulb itself, provided by Nature against extremes of heat and cold, and as our sea climate is so different from and so much softer than that of the steppes and mountains of Central Asia, these hairs in cultivated bulbs will diminish

brilliant vermilion-scarlet, with a small, sharply-defined black blotch at the inner base of the segments; the outer flower segments are yellowish-red at the outside. Filaments short, black at base, red towards the top, 1 cm. in length, only half as long as the linear lanceolate bright yellow anthers. Ovary trigonous, red, yellowish towards the tip; stigmas small, yellowish-red. Time of flowering middle of April. This *Tulip* is a particularly bright and exceedingly pretty flower, and its especially brilliant colour suggested the appellation of *nitida*, which I cannot find has ever been used before in the genus *Tulipa*. Native country, high mountains of Bokhara.

TULIPA MICHELIANA, spec. nova (fig. 120, p. 353).

Bulb ovoid, 3 to 4 cm. in diameter; outer bulb-coats thin, brown, completely clothed at the inside with long buff-coloured hairs, and especially so at the base. Peduncle upright, in full-grown plants 30 to 35 cm. long, pubescent. Leaves usually four in number, very

glaucous, with longitudinal and unbroken stripes of brown. On the leaves growing mature these brown stripes gradually disappear. The lower leaf is nearly horizontal, the upper ones more or less ascending; dimensions of lowest leaf, 15 by 4 cm., lanceolate, and slightly undulated towards the margin. The upper leaves are narrow, linear lanceolate, and very much undulated. The leaves have a narrow white membranaceous edge, slightly

others there is only a faint trace of yellow border. Stamens 2½ to 3 cm. long, overtopping the pistil; filaments glabrous, black, subulate, white-tipped, equalling in length the oblong black anthers; pollen yellow. Ovary trigonous, stout, green; stigmas large, exceeding the ovary in diameter. Native country, steppes of Trans-Caspia. Time of flowering, first week in May.

The brown stripes on the foliage suggest a

laid in the foliage in long and broad brown dots and spots. The flower is much more campanulate in form, the outer segments oblong, ovate, cuspidate (always obovate in *T. Greigi*), of a different shade of red altogether, basal blotches are larger and less marked with yellow, anthers always black (yellow in *T. Greigi*); pistil, which in *T. Greigi* is yellow, in this new species always green.

I have pleasure in dedicating this beautiful new Tulip to M. Marc Micheli, of Geneva, Switzerland; a distinguished botanist whose collections of plants, so successfully cultivated in his gardens at the Château du Crest, are now among the most important on the continent.

There are about six or eight more Bokhara, Turkestan, and Persian Tulips in Messrs. Van Tubergen's nurseries, which probably will also prove to be new and unknown ones; but as the genus *Tulipa* is admittedly a difficult one to deal with, and its literature confused, I have for the present only enumerated those which most easily have been proved to be undescribed species. John Hoog, Haarlem, Holland.

(To be continued.)

CROSSING THE HIPPEASTRUM WITH CLIVEA.

I WAS much interested in the cross said to have been made between the *Hippeastrum* and the *Clivea miniata*, by Mr. Chapman, Captain Holford's head gardener, mentioned in the *Gardeners' Chronicle* for April 5, p. 230, for last year I succeeded in effecting three crosses between two similar *Amaryllids*.

I had some Dutch, some French, and some English *Hippeastrums* in flower at the same time as the *Clivea miniata*. I tried many experiments with the pollen of the *Clivea* on the pistils of the *Hippeastrums*, but it took effect on only three, viz., two Dutch and one French.

I was astonished to see the ovary swell under the influence of this pollen of a different genus. I was more astonished, when the capsules matured and burst, to find that the two Dutch *Hippeastrums* had respectively sixty and nine fine, plump seeds, and that the French one (*Vittata à fond rouge*) had twenty-nine similarly developed seeds; but I was most astonished to find that all the seeds germinated within a month or so.

I have now about ninety plants of these crosses, which I recently potted singly, and which are in a healthy condition.

It remains to be seen what will result out of these bi-generic crosses. They say that "the proof of the pudding is in the eating of it," and the proof of real crosses is in the flowering of them.

My plants are only a year old, and in one case—the cross that gave only nine seeds—I can see no difference in the foliage from *Hippeastrums* crossed with *Hippeastrums* of the same age; but in the other two cases the first year's foliage is very much narrower.

One of Mr. Chapman's plants of this bi-generic cross is about to flower, and we shall await with special interest the birth of this novelty, and to see whether it be a true hybrid, or a case of a sort of Parthenogenesis, evolved by the stimulation of foreign pollen.

For the result of my experiments I shall have to wait some three years or so.

This year I have repeated the same experiments, and some of the ovaries acted on give promise of results; but curiously enough, the *Hippeastrum* which gave sixty good seeds last year entirely failed this year.

If these crosses result in producing true hybrids, the name of "*Hippo-Clivea* ×" would not be inappropriate. E. Bonavia, M.D.



FIG. 119.—*TULIPA NITIDA* (?), *GESSNERIANA* VAR.

ciliated in the uppermost leaves. Peduncle one-headed, flower large, campanulate, 6 to 8 cm. long, of a brilliant vermilion-scarlet at the inside, the three outer segments tinged with lilac at the outside. Outer segments oblong-ovate, cuspidate, the inner ones obovate, mucronate. The base of the segments is furnished with very prominent black lanceolate blotches, those on the inner flower-segments being much the largest, and often ascending half way up the petal; in some instances broadly edged with yellow, in

relationship to the now well-known *T. Greigi*, which hitherto was the only *Tulipa* species known which shows a colour variegation in the leaves; but *T. Micheliana* is perfectly distinct in the following points: In *T. Micheliana*, the inner side of the bulb-coats are much more densely clothed with hairs; the peduncle is taller, the leaves much longer, more glaucous, less undulated, and much thinner than in *T. Greigi*. The leaves of *T. Micheliana* possess longitudinal and unbroken narrow stripes of brown; in *T. Greigi*, the brown is

BULB GARDEN.

SPONTANEOUS SEEDLINGS OF NARCISSUS.

THIS subject, as pointed out by Mr. F. W. Moore (p. 244), is one of much interest to gardeners, yet it would seem that too much is taken for granted in the matter. I am fully aware that it is easy for those who are well acquainted with the species and varieties to assign probable parents in the case of a seedling so appearing, but it is also quite easy to make mistakes. I am led to this remark by Mr. Moore's reference to "Marie," said to be a "spontaneous cross between *N. cernuus* and *N. bicolor*." Now, if we are both of us speaking of the same *N. bicolor*, this variety flowers so much later than any form of *N. cernuus* known to me, that the stigma of the latter would be incapable of receiving the pollen of any variety flowering so much later. In so far as my observations go, the stigma of any given variety is in a state to be influenced by its own or foreign pollen some five or six days after the apex lobes of the stigma are developed. Up to that time pollen may have an influence, while if left a few days longer no fertilisation would take place. I am the more interested in this matter for the reason that I have endeavoured for the past year or two to cross *N. cernuus*, or a good form of *N. c. pulcher* in point of fact, with *N. Grandee*. I have always failed in the open ground however, for when the earliest *N. Grandee* has any pollen ready, *N. cernuus* is long past the receptive stage, and of course its own pollen long since scattered and lost. At Hampton the varieties *N. bicolor* and *N. Grandee* flower at the same time, and the former may be best described as a small form of the latter. It is in these circumstances that I should be doubtful as to the parentage of "Marie." Has Mr. Moore any reason for doubting the influence of either *N. Horsfieldi* or *N. Empress*, both of which flower at the same date as *N. cernuus*? and I note Mr. Moore speaks of the flowers of "Marie" as being in form like those of *N. Horsfieldi*. I have no doubt he has his reasons for referring "Marie" to the varieties named in a recent issue of the *Gardeners' Chronicle*, but at the same time it appears to me that the more probable parents in any accidental cross would be those which flower naturally at the same time. Doubtless the best home for these spontaneous crosses is now being made in not a few gardens by planting *Narcissus* on the turf, where the seeds and the seedlings will be more free from the dangers of hoe, rake, and spade, than in a cultivated border. E. H. Jenkins, Hampton Hill.

PHOSPHORIC ACID AND POTASH IN SOILS.

THE fertility of a soil is estimated, not by the total amount of chemical constituents which it contains, but chiefly by the availability of the plant-food ingredients.

Phosphoric acid, though soluble in water, is not easily washed from the soil, either by rain falling upon it or by artificial waterings.

In some recent investigations by Dr. Bernard Dyer with soils obtained from the Experimental Station at Rothamsted, it was found that there was little risk of loss of either phosphoric acid or potash, even if large quantities are applied at one time than what are required for the immediate use of the growing crop, but that these elements accumulate in the upper layers of the soil, where they remain until taken up by the plant. It was, however, found that these ingredients when derived from farmyard or stable-manure

were less stationary than when derived from artificial manures; considerable quantities were found to have penetrated into the subsoil even as low as 27 inches from the surface. This is doubtless due to the more open and porous texture of the soil under the influence of continuous applications of large quantities of organic and bulky manures.

When a manurial application of superphosphate, combined potash, and other mineral salts is made, a distinct influence is exerted in the retention by the soil of phosphoric acid in a less fixed and, therefore, presumably more available condition: while if, for want of nitrogen in the soil, the growing plants have been unable to utilise all the phosphoric acid thus rendered available, more of it descends to the subsoil, as a result of the soluble action of these alkali salts. The importance has for many years been fully recognised by the intelligent horticulturist of applying nitrogenous manures in combination with phosphates, and the reason for this practice is shown in the foregoing statement.

In some of the vineyards of France it was found that there was a feeble development of wood, a falling-off of blossoms, diminished yield of Grapes, diseased leaves and roots, with a consequent retrogression of fruit quality. Attempts were made to remedy this defect by the application of abundant dressings of cow-manure—a material which has long been recognised to be one of the best of fertilisers available for the purposes of viticulture: nevertheless, this treatment proved utterly incapable of arresting the gradual exhaustion of the soil. Old vineyards exhibit a continuously progressive falling-off in fertility, and require digging at intervals, which become more frequent, or even, after a short period, they frequently have to be replanted. It is readily conceivable that soil which is frequently being turned over, so that fresh portions are always brought in contact with the roots ramifying in it, must, in course of years, lose much of its pristine richness, that cannot be completely restored by cow-manure alone.

The writer is acquainted with a plantation of Black Currant bushes which had been manured year after year with heavy dressings of peat-moss manure, and yet this material utterly failed as a restorer of soil fertility: the Currant-trees blighted, lost their leaves, and the fruit was scanty and of poor quality. After various trials it was found that to ensure perfect nutriment of the bushes, and to render possible the production of good and full yields of fruit, chemical manures providing available phosphoric acid must be resorted to. Phosphoric acid is directly connected with the increased development of fibrous feeding roots within the surface soil, that enables the plant to obtain the maximum of benefit from rainfall and bright sunshine. This is the special effect of phosphatic manures when applied to superficially rooted crops, such as Turnips, Onions, Potatoes, Carrots, &c., and it is by virtue of this development that these crops so markedly exhaust the available nitrogen within the soil, and especially of the surface soil.

In regard to the element potash, it is sometimes stated that this ingredient is of relatively less importance than either nitrogen, phosphoric acid, or lime: partly for the reason that fertile soils are naturally richer in potash, and because the generality of plants remove a smaller quantity of this element from the soils than of the other substances mentioned.

Until recent years it had not been made quite clear what function potash exactly performed in the plant, although it has been proved over

and over again that no plant is able to grow satisfactorily unless potash be present in a more or less available condition within the soil.

A theory was at one time held that soda, which is not an indispensable plant ingredient, was capable of replacing potash in the plant: but this has now been shown to be false. No other substance can replace potash, which is an essential constituent of all plants.

According to investigations at Rothamsted, it is found that the presence of available potash in a soil is an important condition of the formation in plants of carbo-hydrates generally. It is always to be found in the actively growing parts of vegetation, as in the growing buds and shoots, and it exists in relatively large proportion in the seed. In the culture of Potatoes, potash is a most necessary ingredient in the production of the carbo-hydrate starch; and in the culture of Turnips, Carrots, Beets, and all descriptions of fruits, the carbo-hydrate sugar is greatly dependent on a liberal available supply of potash—and the richer the soil may be in the element nitrogen, which necessarily increases the luxuriance and succulence of growing plants, the more potash will be required. In fact, the great function of potash is, that it acts as a carrier of the ingredient nitric acid to growing parts of vegetation, and assists in the maturation, colouring, and ripening of fruits.

Now, there are some Apples which are fit for table in early autumn, while there are others which only become ripe when kept over the winter. Experiments have shown that succulent fruits, such as Apples and Pears, are remarkably influenced by the different elements of manure, not only with regard to their size, but also with regard to composition and maturity of the fruit juices: thus, the substances, potash and phosphoric acid, favour early maturity, while nitrogenous manures retard ripeness. Consequently, Apples and Pears that are required for early market or consumption, may be stimulated to forwardness by dressings of superphosphate of lime, basic slag, and potash: while fruits that are grown more exclusively for winter use may be retarded by making the ingredient nitrogen of greater prominence in the manurial mixture than either potash, phosphoric acid, or lime. Further, the later crops having the whole season for their growth, greater dependence can be placed upon the natural resources of the soil. J. J. Willis, Harpenden.

NURSERY NOTES.

SHOWY FLOWERING PLANTS AT READING.

OF the indoor plants so well cultivated by Messrs. Sutton & Sons, some of the most showy are at their very best at the present time. These include *Gloxinias*, herbaceous *Calceolarias*, and *Cinerarias*. We had the pleasure of seeing them on Monday, the 26th inst., and found them to be of the highest merit, whether judged from the standpoint of quality in "strain," or that of excellence in cultivation.

An inspection of the *Gloxinias* showed that the collection includes three or four strains at least possessing different characteristics in the form and colouring of the flowers, but resembling each other to some extent in habit of growth. The habit encouraged is one which develops short, moderately broad leaves (generally known as the *crassifolium* type), and numerous large upright flowers, on stout, erect peduncles. The greater substance that is obtained in the flower itself, the longer will it last, either upon the plant or as a cut specimen.



FIG. 120.—TULIPA MICHELLIANA. (SEE P. 30.)

The best known types are the self-coloured flowers, and those with white edges and bases, with a ring of colour next the white margin. Of the self-coloured flowers certain special varieties are kept to name, as Reading Scarlet, of very brilliant colour and large size, the colour

being a bright rosy-crimson; Sutton's Purple, and Her Majesty. We include Her Majesty amongst the self colours, though correctly speaking the flowers are absolutely devoid of any colour whatever. Its white is of the very purest, and no Gloxinia is more valued than

this one. Of the other type, Duke of York, scarlet, with white edge; and Duchess of York, purple, with white edge, are instances.

In addition to these, however, there are two strains, of which the type varieties are known as "Prince Edward" and "Empress." Empress is the result of crossing the spotted strain introduced from the Continent some years ago, with crissidatum varieties. It has shortened leaves, and the flowers more substance than the original spotted strain, and in place of the spotting the flowers are laced and mottled in a variety of ways. In "Prince Edward" the spotting is preserved, with a better habit of growth. The mixed varieties present a charming variety in colour, and all of them are bold in character.

THE HERBACIOUS CALCEOLARIA

does not appear to be everyone's plant, and only occasionally now-a-days do we see really well-grown collections in private gardens. It must be admitted that they are not the best plants for supplying flowers for cutting, and some may dislike their rather "squat" appearance, but against these disadvantages it should be remembered that they are exceedingly floriferous, completely covering themselves with heads of flowers of the most brilliant hues, and exhibiting markings of exquisite beauty.

Those now in bloom at Reading are from seeds sown in the middle of June last, in a cold frame. Calceolarias greatly dislike fire-heat, and it should never be employed except to prevent injury from frost in winter. In very severe weather, a few mats thrown over the frames at night will enable the plants to tide over the cold with a minimum of fire-heat. The rooting medium afforded the plants is moderately light, being a compost of loam and leaf-mould in about equal proportions. Messrs. Sutton's grower describes this as a "faky" soil, and when the plants are being put into the pots in which they will flower, the loam is left in rather large pieces.

Messrs. Sutton's plants are now in the fullest bloom, and are contained in a lean-to house having no back, except one of tiffany that reaches three-parts its height, and a Privet-hedge close up to the house, and as high as the roof. Through this hedge the breezes enter the house and keep it cool even during hot sunshine; the roof-glass is shaded with blinds also when the sun is strong.

It is very difficult to describe the variations in the collection of Calceolarias, because these are almost as numerous as the plants. The only one that is kept to name, and obtainable to name, is Cloth of Gold, a variety well known for its richness of colour, large flowers, and good habit. Though seeds are saved from most of the other varieties, and raised separately each year, they are distributed mixed altogether. Amongst the many plants, we noticed flowers of self colours, also spotted, laced, mottled, netted, and other varieties in which the markings are really of exceptional attractiveness. Prevailing colours are crimson, rose, brown, cherry-red, orange, white, with crimson markings: crimson, with orange-yellow coloured markings: creamy-yellow, with purple-crimson markings: brownish-crimson on orange coloured ground: white, with crimson "hailstone-like" spots, &c. A very pretty and uncommon netted variety can hardly be described, except as crushed strawberry coloured and yellow. Another was pure silvery-white, except for sparse lilac-rose coloured markings. The typical habit that is encouraged, is that of a plant that produces its blossoms all on the same plane or

level, opens them at nearly the same time, has few small ones, the blooms being of equal size, and if the colours be good and brilliant, the larger their size the better they are appreciated.

The Cinerarias consisted of a collection of the stellate-flowered varieties; and it was noticeable that in this strain are almost all the colours obtainable in the florists' varieties. The flowers are exceedingly numerous, and the habit of the plants branching and graceful. One characteristic observed in some of the best of these we had not previously seen, except in the florists' varieties. We refer to the rolling of the florets underneath, a peculiarity illustrated in fig. 112, *Gardeners' Chronicle*, May 11, 1901, in the case of a florists' variety. The same peculiarity, when present in the stellate varieties, as noticed at Reading, has the effect of making the flowers appear more stellate, and increases their attractiveness.

NOTES FROM PADDOCKHURST, SUSSEX.

IN Sir Weetman Pearson's garden the following plants deserve notice, viz.—

Dracena Mayii.—The brilliant pink tint which suffuses the young growths of this attractive form, and its excellent habit of growth, fully justify the award made to it by the Floral Committee. It is in good character.

Berberis stenophylla ×.—A group of this fine hybrid is now a most attractive feature; a free growth is followed by numberless rich apricot-tinted festoons of blossom. It scarcely seems possible to imagine a subject more perfectly at home than this fine *Berberis*, and it is keeping up its blossoms in wonderful profusion.

Allamandas in Baskets.—In one of the stoves there are to be seen baskets planted with *Allamanda Hendersoni* suspended from the roof; they are making a luxuriant growth, and though not yet in flower, there is the prospect of a glorious bloom shortly. The roots of the plants being in a confined space, a good deal of generous feeding is requisite, and they get full attention from Mr. Wadds. It is certainly not usual to see this fine stove evergreen climber employed in this fashion.

The Pyrus Malus arches.—These are just now a very fine feature. Since an illustration of this peculiar feature appeared in the *Gardeners' Chronicle*, the plants have increased in size, and they are now blooming very freely, the pink and crimson forms alternating on the arches, which extend for a considerable distance along on both sides of a roadway leading to one of the entrances to the grounds. The alternating of tints has a good effect, but the *Pyrus* flowers only for a short time, and then for a considerable part of the year there is only foliage to be seen. If each third arch had been covered with climbing summer and autumn-flowering Roses, the floral effects would be continued throughout the season. Paddockhurst is a charming place at this season, with its wealth of beautiful tints of leaf and flower, and it is admirably managed by the head gardener, Mr. A. B. Wadds. R. D.

FRUIT CROPS IN FRANCE.—There appears to be little doubt that the recent spell of severe weather in France has had a most injurious effect on crops of all sorts. A cold rain-storm was followed here and there by snow, hail, and frost. In many districts orchard fruits have suffered severely, and the Vines have been sadly smitten.

The Week's Work.

THE KITCHEN GARDEN.

By T. TURTON, Gr. to J. K. D. WINOFIELD DIGBY, Esq., Sherborne Castle, Dorsetshire.

Celery.—The planting of the earliest sown Celery in the trenches may now be carried out, and if the plants have been prepared in boxes, as advised in an earlier Calendar, very little check will be inflicted if lifted and planted. If this be done carefully, the plants will need no shading in sunny weather. The plants may stand 10 to 11 inches apart, and the trenches dug out 5½ feet apart, a distance alike suitable for the Celery and for sowing rows of Peas next year. The trenches should be 15 inches wide, one good spit in depth, and have the bottom soil loosened, then apply rotten dung at the rate of 1 wheelbarrow-load to 15 lineal yards, digging this in with a fork, and make level. The plants should be set out with a trowel, and unless the weather is showery, apply water that has been exposed to the sun forthwith. Successional sowings should be planted direct from the seed-boxes as they become ready up to the middle of June. This system, as I explained when giving directions concerning the sowing of the seed, saves much labour and many garden frames, whilst the results recommend the practice.

Leeks.—Where these were sown under the protection of a skeleton frame on a warm border at the end of the month of February, the plants will be of considerable strength; and if extra long, well blanched stems, they should be planted forthwith in trenches prepared exactly as for Celery, excepting that the trenches should be dug out 4½ feet apart, and the Leeks planted at 9 inches apart. Good Leeks may be grown by simply planting deeply with a dibber, and except trickling down some finer particles of soil to cover the roots, and leaving the holes to be filled gradually when hoeing or applying water, the rows may be 18 inches, and the plants 9 inches apart.

Brussels Sprouts.—The planting out of the earliest-sown plants may soon take place. I am not an advocate for interlining Brassicas among Potatoes, but I arrange all vegetables to follow those that are past their best about the right time for planting. Before these notes appear in print, the early crop of Cabbages will be cleared off, and the ground needs simply digging with forks, and left untouched till a showery day occurs, which must be utilised for planting the Brussels Sprouts. Let the plants stand 3 feet apart from row to row, and the plants 2 feet apart in the rows. Successional planting can be made as fast as the ground gets cleared of Cabbages, the latest planting being made about the end of the month of June. In order to obtain firm Sprouts of a moderate size, the soil should not be made rich; and by planting directly another crop is finished, and before the plants get spoiled in the seed-bed, they grow away steadily. Brussels Sprouts grown in this manner are better in flavour than those from plants grown in rich soil, and they are better enabled to withstand frosts.

THE ORCHID HOUSES.

By W. P. BOUND, Gardener to J. COLMAN, Esq., Gattou Park, Reigate.

Phalænopsis.—The old sphagnum in most cases will require to be picked out carefully, and as many as the crocks as possible without unduly disturbing the roots. Then well wash the roots to remove any decayed portions of moss or other filth that may have accumulated. Cut away all dead roots, and fill the pan or basket with clean crocks or pieces of soft brick, carefully working them in amongst the roots. Surface with good clean heads of sphagnum. Should any plant require a new receptacle, I strongly advise the use of pans in preference to baskets. The plants will require considerably more water now, and it is most important that no water contain-

ing lime be used for the purpose—rain-water preferably. Frequently damp the interior of the house to cause extreme humidity.

Calanthes.—Plants of the deciduous section are now fast developing their growths, and the roots will have taken a good hold of the compost. They will require more water than they have been afforded, but never until they are well dry. Let them have the advantage of sunshine, but not sufficient to cause discoloration of the foliage, gradually reducing the amount of direct sunshine as the growths develop. A little sunshine during the early period of the growth hardens the foliage, and enables it to hold on better in the autumn.

Oncidium serratum, O. monachicum, and O. macranthum.—Plants not flowering this season will be well started into growth. Directly the new growths have attained the height of about 6 inches, any repotting or resurfacing that is necessary should be carried out. The thick fleshy roots peculiar to these plants require a very light compost, and the potting should be done so that the compost when the operation is completed remains very porous. A very suitable mixture consists of equal parts of good fibrous peat from which most of the fine soil has been taken, and clean chopped sphagnum. The rhizomes from the peat should be used for drainage material. Fill the pots to the extent of one-third full with the rhizomes, and do not mound up the compost beyond the rim of the pots. In cases where the leading pseudo-bulb is too high to allow the young growth to take immediate advantage of the compost when its new roots are produced, the back portion of the plant should be cut away sufficient to allow the base of the new growth to be on a level with the compost. In all cases I advise the removal of back pseudo-bulbs, retaining not more than two behind the leading one. The operation of potting should be completed by inserting a sufficient quantity of good sphagnum heads to eventually cover the surface. The plants will require very little water till the new roots have entered the compost, just sufficient to induce the sphagnum to grow, and gradually increase the supply. Spray the plants overhead in bright weather, and frequently damp the shelves between the pots. At all seasons of the year afford the plants plenty of fresh air. No better house can be found for them than the Odontoglossum-house. The growth on plants flowering this season will be much less forward, and potting should be deferred till the flowering season is over, and the new growths get well advanced. No plant should be allowed to flower unless in robust health. The spikes that will produce flowers next season will soon be showing themselves, and it should then be decided if the plant is strong enough to successfully develop its flowers without unduly weakening itself. The plants that are now carrying flower-spikes should be freely watered and sprayed overhead, and any plant, even at this season, should have its spike removed if the bulb producing the spike is becoming shrivelled to an appreciable extent.

FRUITS UNDER GLASS.

By JAMES WHYTOCK, Gardener to the DUKE OF BUCCLEUCH, Dalkeith, Scotland.

Melons.—With ripening fruits the plants require more care than at any other period, for the foliage should remain clean and healthy till the fruits are ripe; but less water is required at the roots, and drier air than hitherto, so long as the foliage does not flag. If there are two lots of plants in the Melon-house, the fruits on the earlier plants should have supports soon, and the shoots be shortened to the leaf beyond the fruit, and crowding of the foliage avoided. The quality of the soil will determine the number of fruits which may be left on a plant; and fruits of middle size are preferred to large ones. Cover the roots with loam mixed with fish-guano, or some other readily soluble manure, and afford water often at this stage; and keep a night temperature of 70°, and one from 80° to 90° by

day, closing in the afternoon at 90°, at which time syringe the plants. The next succession of Melon-plants should now be planted, but it will not be necessary to fill up the pits with tree-leaves and stable-litter for affording bottom-heat, as a shelf 18 inches wide covered with 6 inches of soil in a house having sufficient piping to maintain a mean temperature of 70° will suffice. Let the plants be set out at 2 to 2½ feet apart, and train each to a single stem up nearly to the glass.

The trees in the earliest Peach-house.—The fruit being gathered, remove the shoots which have borne fruit, and any other not required for next year's fruiting. This will allow sunlight to reach the remaining shoots, and when there is no longer any danger of frost, remove the lights or as many of them as possible. Keep the roots moist, and do what is needed to retain the foliage clean and healthy for as long a time as possible; frequently syringe it, and if red-spider, thrips, or scale are present, apply XL-All insecticide; or instead, mix 1 lb. of soft-soap in a gallon of boiling water, with ½-pint of paraffin oil. Syringe the trees with ½-pint of the mixture added to a 3-gallon pot of hot water.

Succession houses.—Keep the trees clean, but where the fruit is ripening syringing must be stopped; put aside the leaves so as to expose the fruit to the sun, and afford air constantly, with a little heat in the hot-water pipes. Trees having fruits stoning should not be forced much, but maintain with plenty of air admitted a temperature at night of 55° to 60°. On bright days syringe the trees twice daily. Always examine the border before applying water, as a state of over-dryness or overwetness should alike be avoided.

Mid-season Vineries.—Muscat of Alexandria and other Grapes, which will be consumed in the autumn and early winter, should be thinned early, so that the berries may grow to a large size; and let them stand wide apart, so that they may keep for a long period of time without decaying. If the Vines are young, and bunches large, leave only a light crop, and leave the shoots sufficient space in which to grow, or good Grapes will not be produced. The weather here is unusually cold, and much fire-heat has to be employed on cold nights, even when the most is made of the sun-heat by day. If the soil of which the borders consist is light, or not deep or properly drained, afford water copiously once or twice, sprinkling each time some Vine-manure on the surface. The borders, if heavy, being afforded water liberally at the beginning, will require no more till an examination has taken place. Let a moist atmosphere be maintained as a corrective of the dryness caused by fire-heat.

THE FLOWER GARDEN.

By R. DAVIDSON, Gardener to EARL CADOGAN, Culford Hall, Bury St. Edmunds.

Bedding-out.—Now that the weather has become warm, and much rain has softened and ameliorated the soil, the work of planting out bedding plants may be begun without delay, and the beds should be deeply dug and manured where necessary. Before planting, the beds may need to be trodden lightly all over, and made even on the surface with the rake. Some kinds of plants may need fresh loam instead of manure, usually such are those cultivated for their leaf colouring, and any which make much growth of leaf and shoots to the detriment of the floral display. Plants of weak or slender growth will have their needs supplied by a moderate dressing of leaf-mould. No hard-and-fast rule can be devised for all kinds of soil, and the gardener must use his own discretion in such matters. Let a beginning be made with those plants that have been perfectly hardened off. Assuming that most gardeners will have already decided upon the general arrangement of the beds and their planting, planting becomes an easy matter. One or two items of importance must be borne in mind, viz., the uniform grouping of the different kinds, allowing each plant sufficient

space for its proper development, placing them so that the colours blend harmoniously, and not to have small young plants among large ones. After planting, which should be performed firmly, afford water to thoroughly settle the soil about the roots, and afford no more at the roots till growth has begun, but in sunny weather the plants will be benefited by being syringed morning and evening. As soon as a bed is planted let all debris be cleared away, and the turf and gravel swept clean, especially the former, or the mowing-machine may get injured. Clear away all flower-pots, and make the beds tidy with a rake or one-handed fork.

Flowering Deciduous Shrubs.—Forsythia suspensa (a shrub much later in flowering here this spring) should have a portion of the wood which has flowered removed, and the best of the one and two-year-old branches, from which the flowering shoots of next season will come, regulated a little. Prunus triloba, whether grown as a wall plant, or as standard or bush, having gone out of flower, may have the shoots cut to one, that is, the stronger bud; or if an extension of the tree is desired, let a number of the stouter branches remain, and disbud these in due course, retaining only the young growths necessary to form an evenly balanced crown. Prunus sinensis flore-pleno and rosea plena may be thinned somewhat similarly, although the knife should be used less freely, the plants being weaker growers, and sometimes suffering the loss of branches in an unaccountable manner. The shoots of Magnolia stellata should be thinned where crowded, the weaker shoots being cut to a basal bud. By regulating the tops of those that remain, the shoots of the current year will have space to develop and mature properly, without which good flowering cannot be expected. The shoots of M. Soulangiana and M. conspicua may also be thinned, removing some of the shoots that have flowered this year, although to a less extent in the case of M. conspicua. Corechorus (Kerria) japonica and Deutzia gracilis should have a considerable proportion of the shoots that have flowered removed, especially from the centre of the head, the object of the pruner being the development of long shoots and suppression of the weaker sprays. In some cases it may be possible to remove entirely much of the old wood.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bickton, East Budleigh, Devonshire.

The Morello Cherry.—The black aphid has probably increased in numbers during the flowering period, when no measures could be taken against it; and the cold nights and chilling winds have prevented growth in a great degree. But now that the fruit is set, the trees may be dressed with the kind of insecticide advocated for use on the sweet Cherry and the Peach, unless the points of the shoots are badly infested, when dipping may be required. Superfluous shoots may be pinched at the fifth leaf or entirely removed, and suitable shoots laid-in for fruiting another year. It is customary to defer the pinching or stopping of shoots to form spurs until the fruit has stoned, but I think it matters little when carried out, there being always enough shoots left for extension of the tree. In lean-to, unheated Peach-houses in which sweet Cherries are planted on the back wall, I pinched all the shoots just as the petals of the flowers began to fall; a good set was secured, and the fruit now being gathered is equal if not better than that on trees in an adjoining house, where no stopping was done until the fruit had stoned.

Pears.—In spite of the severe weather most varieties of Pears have set well here. The thinning of the shoots and also the fruits should receive early attention where called for. Shoots not required for the extension of the trees may be stopped at the fifth or sixth leaf, thus averting the starting of the dormant buds which will form fruit-buds later on.

Miscellaneous Hints.—The removal of the much around trees which was advised in a

recent Calendar may in some cases have led to the cracking of the soil, in which case the surface should be lightly pricked over with a fork, and water applied in the absence of heavy rains, a mulch of strawy litter being then put over the roots. These remarks apply only to trees planted within the last six months; established trees need not be mulched before the end of June, unless very warm weather set in, excepting the soil is very light, when a mulch of some sort is always beneficial to the trees. The stronger shoots on all stone fruit-trees should be secured to the wall in the general direction which they are intended to take, using loose shreds, ties, or thin dry twigs of Privet, Fern-stems, &c. Pinch out the points of strong run-away shoots, and the weaker shoots will make more rapid progress, especially if they are allowed their freedom for a few weeks longer. Remove any nails and shreds that are likely to press against the fruits.

PLANTS UNDER GLASS.

By J. C. TALLACK, Gardener to E. MILLER MUNDY, Esq., Shipley Hall, Derby.

Forced Shrubs.—All plants of a shrubby nature, viz., Azalea mollis, A. rustica, and the Ghent varieties, Laburnums, Lilacs, Gueldres Rose, Staphylea, and Deutzia, which have been hardened off with a view to cultivating them for future flowering, should now be placed outside. I prefer to leave them in their pots, and plunge them in the open garden, some few inches below ground-level, so as to allow of a top-dressing of leaf-soil and manure being applied, and into which the new roots will soon run, helping to build up good flower buds. Those plants which were not hard forced will be available for next year's forcing; but the early-forced ones must remain for twelve months longer, by which time they will have made fine specimens, if properly treated in the meantime. The plants named above, with the exception of the Azaleas, should be plunged where they will get the fullest amount of sunshine; the Azaleas, on the contrary, enjoy partial shade. Some of these plants will require cutting into shape. In addition to these shrubs, it is advisable to plant out select types of Hoteia japonica, and some fine forms of this plant come to hand with the ordinary stock, and are worth planting out for future employment, provided the garden is not liable to spring frosts.

Liliums.—L. longiflorum will now be found in many gardens in various stages of growth, according to the sort of treatment afforded; but a word in favour of keeping as late a batch as possible may not be out of place, these retarded plants flowering at a time when out-of-door flowers are not numerous—that is, from the end of the spring to the arrival of full summer. This last succession of Lilies should be placed in a sheltered and partially-shady corner out-of-doors. They should be top-dressed, as advised for earlier batches, and encouraged generally. As the value of the flowers of L. speciosum (lanceifolium) and L. auratum lies largely in their coming late in the summer, the means recommended for retarding L. longiflorum should be employed for these, plunging the pots in coal-ashes.

Caladiums.—It may be necessary to shift some of the bigger plants, with the view of keeping them in a growing state for as long a period of time as possible. This repotting needs a great deal of care in the execution, and for several days afterwards the house in which the plants are placed should be shaded and kept very moist, in order to prevent the flagging of the leaves.

Furnishing Plants.—The propagation of most species of plants employed for table decoration, and in furnishing vases, baskets, &c., in rooms, should now be taken in hand, viz., Codiaeums, Pandanus, Dracenas, and Reedias; while useful little potsful of Cyperus alternifolius may be obtained by sowing seeds forthwith, and reducing the number per pot to three. Useful sizes of pots are large 60's and 51's.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plant 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 thankfully receive and 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 THE MONTH OF JUNE.

- SUNDAY, JUNE 1 {Chambre Syndicale des Hort.
Belges, Ghent, Mect.
- TUESDAY, JUNE 3 {Scottish Horticultural Association's Meeting.
- WEDNESDAY, JUNE 4—Derby Day.
- THURSDAY, JUNE 5—Linnean Society Meeting.
- SATURDAY, JUNE 7 {Royal Botanic Society's Meet.
Société Française d'Hort. de
Londres Meeting.
German Gardeners' Society,
London, Meeting.
- TUESDAY, JUNE 10 {Royal Horticultural Society's
Committees Meet.
- WEDNESDAY, JUNE 11—Yorkshire Floral Fête (3 days).
- SATURDAY, JUNE 14 {German Gardeners' Society,
London, Meeting.
- WEDNESDAY, JUNE 18—Royal Botanic Society's Meet.
- THURSDAY, JUNE 19 {Linnean Society Meeting.
Jersey Agricultural and Horti-
cultural Society Rose Show.
- TUESDAY, JUNE 21 {Rose Show and Conference by
the Royal Horticultural Society
at Holland House,
Kensington (2 days).
Royal Oxfordshire Horticultural
Society Commemoration
Show.
- THURSDAY, JUNE 26—Coronation of the King.
- FRIDAY, JUNE 27—General Holiday.
- SATURDAY, JUNE 28 {Windsor, Eton and District
Rose Show.
Maidstone Rose Club Show.
- MONDAY, JUNE 30—Canterbury Rose Show.

SALES FOR THE WEEK.

- MONDAY, JUNE 2—
Bedding and Greenhouse Plants at Blandford Nurseries, Hampton Road, Teddington, by Protheroe & Morris, at 12.
- TUESDAY, JUNE 3—
Nursery Stock at the Mile Ash Nurseries, Duffield Road, Derby, by order of Mr. F. Lewis, by Protheroe & Morris, at 12.
- THURSDAY, JUNE 5—
Plants, Bulbs, &c., at 67 and 68, Cheapside, by Protheroe and Morris, at 12.
- FRIDAY, JUNE 6—
Orchids in great variety, by order of Messrs. Stanley, Ashton & Co., 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—59.2°.

The first of the "celebrations" of this busy season took place on Wednesday last in the historic Temple Gardens. The morning was gloriously fine, but afterwards slight showers somewhat interfered with the comfort of the visitors, who nevertheless poured in, in their hundreds—we think we may say their thousands. The most distinguished guests were, of course, H.M. the King and H.M. the Queen, who, attended by Captain HOLFORD, made the circuit of the tents before the public was admitted. As for the Show, well—it was a "Temple Show!" The conditions of space and time being immutable, there is obviously no opportunity for innovations, and if such plants as *Amorphophallus titanum* or *Aristolochia gigas* do not choose to flower at the right

moment, why, of course, there is no help for it. Perhaps it is as well, for the plants named are something more than fragrant. As it was, their MM.'s nostrils must have been assailed by the smell of Onions, which not even Mr. MORTIMER's Cucumbers could assuage. To the botanist the most delightful portion of the Exhibition was at one end of the great tent, where Sir TREVOR LAWRENCE's collection of botanical Orchids was staged. It would be more appropriate if these little gems were exhibited before the Orchid Committee on some occasion when they were not brought into competition with their more showy congeners.

The Orchids, generally, were very fine and very interesting, as our detailed report will show. Clematis Nellie Moser was very conspicuous, the flower segments striped with rosy lilac. Messrs. CANNELL'S Cannas were veritable "blazers." Of the Roses of Messrs. W. PAUL, PAUL & SON, TURNER, CANT, and MOUNT the less said the better, simply because words fail to do them justice, but we cannot pass over Lady Roberts, Lady Battersea, or the brilliant crimson Liberty. Messrs. CUTBERT's hardy Azaleas were beyond praise, and Pink Pearl Rhododendron, shown by Messrs. JOHN WATERER & Co., more than bears out its reputation.

The fruit trees shown by Mr. LEOPOLD DE ROTHSCHILD and Messrs. RIVERS were triumphs of cultural skill, whilst the numerous groups of tortured trees, Japanese and others, appeal to many who, obviously, do not object to vivisection! Sweet Peas seemed a little out of season, but so, for the matter of that, did the culinary Peas with their profusion of pendent pods. Taken as a whole, the show was less crowded than usual with exhibits, to the great advantage of those which were shown. And it is a great advantage to be rid of the long benches filled with ordinary "stuff," which has little charm for anybody but the exhibitor. We fear the Society may have displeased sundry would-be exhibitors; but we are quite sure that the visitors are proportionately thankful!

National
Fruit-growers'
Federation.

THE promoters of this organization are making an appeal to all who are interested in fruit and fruit-tree culture in this country, to give a support to the objects sought to be secured by the promoters. An influential provisional committee was formed some time ago to frame a constitution and draw up rules; and at a recent meeting at the Westminster Palace Hotel, at which Colonel LONG, M.P. for the Evesham district presided, the following objects were set forth:—The obtaining from railway companies of fair rates for the conveyance and quicker transit for fruit; the abolition of preferential rates, and the giving of facilities for the introduction of foreign produce over the home producer; to urge the distinct labelling of jams manufactured from home-grown fruit; and the collection and diffusion of information useful to fruit-growers.

The question of railway test cases involving points of law was postponed pending the obtaining of a legal opinion. One matter felt to be a great grievance by those who manufacture jams from home-grown fruit appears to be that foreign fruit partly prepared for jam is sent over to this country

in large quantities in the form of pulp, converted into jam, and sold as home manufactured.

The headquarters of the Federation are in London. Col. LONG, M.P., who rendered so much help by championing in Parliament the Market Gardeners' Compensation Act, is the first President; and Mr. A. T. MATTHEWS, Eaton Rise, Ealing, is the Secretary. Already a large measure of support has been promised to the Federation.

PEONIA MOUTAN "ALBO-LILACINA" (Supplementary Illustration).—In the magnificent gardens of Capt. G. L. HOLFORD, C.I.E., at Westonbirt, Tetbury (gr., Mr. CHAPMAN), the formation of a wonderful collection of trees and shrubs of all descriptions was commenced by his father, the late ROBERT STAYNER HOLFORD, Esq., and added to with much discrimination during his lifetime; and this work has been most enthusiastically continued by Capt. G. L. HOLFORD. Gardens such as those of Westonbirt are continually affording examples of exceptional beauty and luxuriance in some or other of the subjects, which in gardens generally are deemed unsatisfactory. Our illustration of a fine specimen of *Pæonia moutan albo-lilacina*, of which the subject of our present Supplement is a remarkable instance. The plant grows in a sheltered nook, and recently carried a profusion of its large white lilac-tinted flowers. Captain HOLFORD gives much attention to the cultivation of plants from China and Japan, but he does not claim to have ever thoroughly mastered the cultivation of the *Montan* *Pæony*, for even in the Westonbirt gardens the plants occasionally decline in vigour, the fine existing collection of Japanese Maples, and some other shrubs, have been grown there with unvarying success, mainly, he alleges, by applying water copiously during May and June especially. This method he finds ensures a strong early growth, which ripens in time to be in a fit state to withstand early frosts and protracted winters.

SIR WILLIAM TURNER THISELTON-DYER, K.C.M.G., C.I.E., F.R.S.—The *London Gazette* has announced the appointment of Sir WILLIAM DYER, Director of the Royal Gardens, Kew, to be Botanical Adviser to the Secretary of State for the Colonies, an office of which he has long fulfilled the duties with conspicuous success.

LIVERPOOL BOTANICAL LABORATORY.—At last the great wish of Professor HARVEY GIBSON, the eminent and popular Professor of Botany at University College, Liverpool, has been gratified by the erection of a fine and imposing block of botanical laboratories, erected at a cost of some £19,000 by Mr. W. P. HARTLEY, of Aintree, a jam manufacturer, and wide-noted philanthropist. The new buildings occupy a good position in Brownlow Street, and when thoroughly fitted up, will be amongst the best in the kingdom. Sir W. THISELTON-DYER, F.R.S., Director of the Royal Gardens, Kew, recently performed the opening ceremony, speaking particularly on the need of so valuable a gift, and of the generosity of Mr. W. P. HARTLEY.

LINNEAN SOCIETY.—On the occasion of the evening meeting to be held on Thursday, June 5, 1902, at 8 P.M., the following papers will be read:—1. On Certain Species of *Dischidia*, and their Double Pitchers, by Mr. H. H. W. PEARSON, F.L.S. 2. On "Silver-leaf" Disease of Plums, by Prof. JOHN PERCIVAL, M.A., F.L.S. 3. Observations on the occurrence of Crystals of Calcium oxalate in Seedlings of *Alsike* (*Trifolium hybridum*,

Linn.), by Prof. JOHN PERCIVAL, M.A., F.L.S.
4. On the Morphology of the Cerebral Commissures in the Vertebrata, by Dr. ELLIOT SMITH, M.A., F.L.S.

LABELS.—The latest development of the penny-in-the-slot industry is represented by an automatic machine. By the action of this machine, the penny having been previously deposited, and sundry manipulations accomplished like those carried out in a typewriter, the ultimate result is the production of a thin strip of metal with the name of the operator legibly embossed thereon. The result is so good that we foresee a great future in store for those who will utilise these machines for producing metal labels, very legible and suited for Roses, fruit-trees, or other garden purposes. Put in the penny and spell out say "Félicité-Perpétue," taking care to spell it correctly! and you will get a very serviceable, indelible label. Of course, on the large scale there might be a reduction of cost.

SALE OF JAPANESE DWARF TREES.—At the Conduit Street Auction Galleries, on the 23rd inst., Messrs. KNIGHT, FRANK & RUTLEY sold without reserve a collection of forty-seven specimens formed by an enthusiastic amateur in Japan, and well representing the art of "nanizing." The plants were sold just as received after importation, without "nursing." The highest price realised was £5, paid for a *Taxus Sieboldi* and two varieties of Maple. A *Juniperus chinensis procumbens*, aged about 120 years, 21 inches high, 26 inches wide, in a terra-cotta pot, fetched £4 5s.

MANOR HOUSE GARDENS, LEE.—On Whit Monday at noon, the Chairman of the Parks Committee of the London County Council, dedicated Manor House Gardens, Lee, "To the use and enjoyment of the people of London for ever." This Manor was held by the Crown from the reign of HENRY VIII. until that of CHARLES I., who sold it to RALPH FREEMAN, at one time Lord Mayor of London. At about the close of the eighteenth century, it became the property of Sir FRANCIS BARING, Bart., with whose family it had since remained. The palace of St. James's at one time was supplied with fruit from the then celebrated gardens at the old Manor House.

MR. OWEN THOMAS.—We learn that Mr. THOMAS, who was gardener to Queen VICTORIA at Frogmore for several years, and who was previously at Chatsworth and Drayton Manor, is prepared to act as horticultural adviser in all matters relating to horticulture, landscape gardening, the decoration of mansions, &c. Mr. THOMAS has kindly consented to furnish us with articles on Table Decoration and the Adornment of Halls, Corridors, &c., articles which will be of interest in relation to the forthcoming Coronation. Mr. THOMAS' experience at Windsor, Buckingham and St. James' Palaces, was exceptionally large.

CORN TRADE.—The fifth issue of the *Corn Trade Year Book* is just announced. This encyclopedia of statistics will be found to be of considerable value to members of the grain, seed, and flour trades. The compiler of the *Year Book* is Mr. G. J. S. BROOMHALL, F.S.S., editor of *Corn Trade News*. The article upon "The World's Grain Trade" in the new edition of the *Encyclopedia Britannica* is by Mr. BROOMHALL.

"PAYING POULTRY."—We note that a little book with this title has been published recently by WILLIAM A. MAY, "Farm, Field, and Fireside" Office, Essex Street, Strand. It deals with the breeds, housing and feeding, hatching and rearing of poultry, and also of their management for market and for the pro-

duction of eggs. Foreign competition is lamented by the writer because its success is in a measure due to the carelessness and indifference of the small British keepers, who fail in method, punctuality, and other business essentials, whereas, for instance, the French poultry-raiser can be trusted in all these points. New-laid eggs would be cheap and matters-of-course, save for the indifference shown in the matter by those small farmers whose complaints are now loudest.

AN ABNORMAL DENDROBIUM FALCONERI.—We have received from Mr. BEDFORD, the gardener at Straffan House, co. Kildare, flowers of *Dendrobium Falconeri*, produced, as he tells us, "In pairs, which is very unusual, I think, as I have not met with an instance before, although I have had long experience among English collections. This plant has 150 flowers, but the pairs are only on the thin, badly-finished growths; all the thick nodes have only one flower, as is the case with one of those sent. Last year the same plant had 170 flowers, but there was no doubling at the nodes. The plant is not so strong this year as last." An interesting case, and probably an expiring effort of the plant.

FLOWERS IN SEASON.—*Prunus Padus* is a handsome flowering half-tree that is well known and appreciated in English gardens for its pendulous racemes of small white flowers. A much more attractive variety is *C. p. Sieboldi*, which possesses a flower raceme of double the size of the type, the white purer, and the flowers opening right to the extremity of the raceme before they begin to drop. We are indebted to Mr. ANT. WATERER for bunches of each. He also very kindly sent flowering shoots of *Pyrus Malus Scheideckeri*, a showy variety.

PLANT PORTRAITS.

DEYEXIA ELEGANS VARIEGATA.—Decorative grass, with linear green leaves, bordered with yellow. *C. Pynaert* in *Revue de l'Horticulture Belge*, May 1.

ORONTOGLOSSUM GRANDE, Lindley, var. *PITTIANA* Hort., Kranzlin, in *Garten Flora*, t. 1498, May.—A variety much less spotted than usual, and with a relatively small, transversely oblong, white lip, flecked with yellow.

BOOK NOTICE.

ELEMENTARY PLANT PHYSIOLOGY. By Daniel Trembly Macdougall (Longmans, Green & Co.).

THIS is a valuable little treatise, intended for use in schools. The old plan of being lectured to is gradually disappearing, and in its place is coming, not only demonstration by the teacher, but the actual working out by the pupil himself of the details of vegetable physiology, so far as that is possible. Thus, in the book before us, the pupil has to see for himself and record the mode of elongation of dicotyledonous stems and of leaves, the germination of pollen-cells and of seeds, the processes of osmosis, bleeding, transpiration, movement of fluids, exhalation of oxygen, and the interaction of green plants and the atmosphere.

This constitutes one course, other longer and more varied ones follow. The book gives directions as to how the mode of growth of the leaf, or whatever it may be, may be seen. The apparatus is of a simple, inexpensive character, such as may readily be obtained in schools.

A training of this character would be most valuable to young men or elder boys proposing to take up gardening. Much of it might be done in winter evenings when outside work is not practicable. At a small cost provision might be made, say at Chiswick, to carry out such a scheme as here laid down.

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT WESTFIELD, WOKING.

In the gardens of Francis Wellesley, Esq. (gr., Mr. Gilbert), the glass structures used to be mainly devoted to the culture of Carnations, and still several of the houses are filled with fine batches of the best of the different sections, all in splendid condition. But lately two houses have been specially constructed for cultivating Orchids, and their owner has them already furnished with a fine selection of some of the best to be obtained, hybrid *Cypripediums* largely predominating. These are arranged in sections, and disposed in either the warm or the cool-house, according to their requirements.

Cypripedium bellatulum, *C. bellatulum album*, *C. Godefroyæ*, *C. G. leucocheilum*, and *C. niveum* and their hybrids are special favourites, and these are very successfully grown by suspending them from the roof, or by elevating them well above the staging, the pots on which they stand having saucers filled with water for the double purpose of giving moisture and keeping back insects. Among the suspended plants were several fine *C. niveum*, each sending up several flowers, and which it is intended to hybridise; a noble variety of *C. bellatulum giganteum* with a profusion of large maroon-purple blotches on its flowers; and a very interesting plant of the typical *C. Godefroyæ* of the original importation of M. Godefroy Lebeuf, and which seems distinct from the plants more recently imported.

Without doubt the best *Cypripedium* in the collection, and the best of its class, is the beautiful *C. × Mrs. Wm. Mostyn*, for which Mr. Wellesley secured a First-class Certificate at the Royal Horticultural Society on January 14, and which was illustrated in the *Gardeners' Chronicle*, February 1, p. 75. Of *C. Fairieanum* crosses there is a good collection, among them being several forms of *C. × Niobe*, *C. × H. Ballantine*, *C. × vexillarium*, *C. × Baron Schroder*, *C. × Juno*, and others of varieties of *C. × Leeanum* there is a selection; of *C. × Euryades*, a good number of fine forms, each differing widely from the others in point of colour; and a very select lot of varieties of *C. insigne*, including *C. i. Harefield Hall* variety, and all the best of the yellow forms of the *C. i. Sanderæ* class.

Among the good *Cypripediums* noted in flower, bud, or extra fine health, were the beautiful *C. × Salus* var. *Mrs. F. Wellesley*, *C. × Ceres Fascinator*, *C. Lawrenceanum Hye-anum*, *C. callosum Sanderæ*, *C. rubescens Ranjitsinghi*, *C. × Memoria Moensii*, *C. × gigas*, *C. × eximium*, *C. × Pollettianum*, "Burford Beauty"; *C. Stonei Hackbridge*, *C. × Allertonense*, several of the now rare *C. glanduliferum*, fine specimens of *C. superbens*, and the "Demidoff" variety of it; a very fine set of *C. Lawrenceanum*, *C. × Kelpie* (*Lawrenceanum × selligerum*), some fine hybrids of *C. Rothschildianum*, of which *C. × W. E. Dickson* is one of the handsomest, and finest in colour, its short spikes, and large, dark reddish-rose tinted flowers seeming to indicate the *C. bellatulum* hybrid had been used in its production. Other *Cypripediums* in flower were *C. villosum aureum*, *C. Hookeræ*, *C. Argus*, *C. Druryi*, and other species.

Besides the known and described varieties, a number of improved seedlings of interesting parentage were observed; and Mr. Wellesley, who makes Orchid-culture his chief pastime, is already busy preparing for batches of new hybrids, or of known ones improved by better

parents being used in obtaining them. In such a collection, where the best forms only are grown, the prospects of seedling Orchids are of the best.

Of other fine plants noted were the beautiful white *Cattleya Mossiae Arnoldiana*, Westfield variety, recently certificated; the pure white *C. Mossiae alba*, and *C. Trianaei alba*, and some finely coloured *C. Trianaei*, of which one flowering for the first time from an imported plant was the best; a richly coloured *C. Warneri*, a good *Cattleya Skinneri alba*, *Laelio-Cattleya* × *Pallas*, *L.-C.* × *eallistoglossa ignescens*, *L.-C.* × *Gottoiana*, the richly coloured *L.-C. Warnhamensis "Hypatia,"* and other *Laelio-Cattleyas*; *Laelia* × *Latona*, a fine form of *Cattleya* × *Hardyana*, and a very select collection of varieties of *Laelia anceps*, including the fine *L. a. Chamberlainianum*, *L. a. alba*, *L. a. Schroderae*, *L. a. Schroderiana*, and many of the best of the other varieties, both white and coloured.

Mr. Wellesley has carefully executed paintings of many of his best things, and the drawings are very useful for reference and for comparison, to show the progress made by the plants represented from year to year.

THE LAWN-MOWER: ITS CONSTRUCTION AND MANAGEMENT.

(Continued from p. 337.)

THE CUTTERS.—These are also important parts of a machine, far more depends on the adaptation of these to their work than is generally supposed. The cutter or "cutting-barrel" is, of course, the rotary knife which by acting on the fixed blade on the machine cuts the grass. So far as regards the cutters, they may be roughly divided into the English and American types, the latter however including all those machines which although English made yet are fitted with cutters of the American pattern.

Firstly, therefore, the English pattern is that with which everyone is familiar, viz., a spindle or axle on which more wheels are mounted. These wheels are notched to receive the cutter blades which are secured in the notches, and are twisted to assist the cutting action. In this type, however, the amount of twist is not very great.

The American cutter, on the other hand, is modelled on far different lines. The cutter here is much larger in proportion, and has fewer blades; for whereas the English barrel has seldom fewer than five, three is not uncommon for American machines. Naturally, to get good results, the blades of the cutter are very much twisted. Both types, it should be understood, do equally good work, but each is adapted for different circumstances. A standard pattern English mower for ordinary use should not be put to work on rough or long grass. The American types, however, will work either with short or long grass, but there is no gain in this, as where much long or coarse grass is to be dealt with, it is far better to have one of the special machines made for this purpose by the leading makers, as the work is far more efficiently done by these.

Reference has already been made to Messrs. Ransomes' "double angle" cutting barrel. This is a patented device by which each blade is divided into two parts, each being set at a different angle, and by this means a better delivery of the cut grass is secured.

Adjustment of the cutters to the bottom blade is variously carried out; but by far the oldest and most generally used by English makers is what may be termed for distinction

"set screw adjustment." In this, the bearings in which the cutter spindle revolves (technically termed "brasses") are free to move slightly upwards or downwards in the frame of

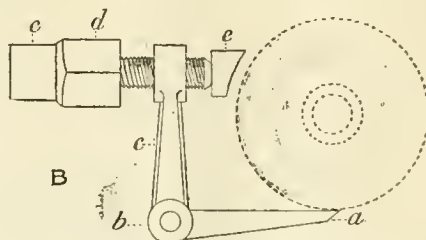


FIG. 121.—MESSRS. COLDWELL'S FORM OF BOTTOM BLADE ADJUSTMENT OF CUTTERS.

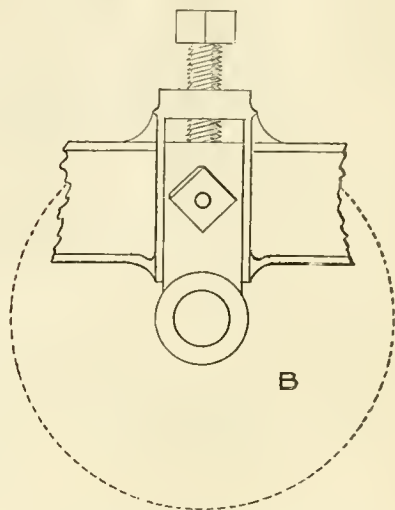


FIG. 122.—FORMS OF ADJUSTMENT EMPLOYED BY MESSRS. GREEN ON THEIR OLDER MACHINES.

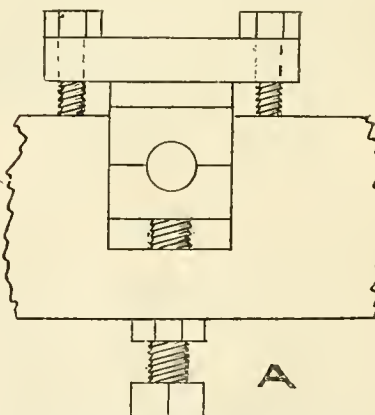


FIG. 123.—FORM OF ADJUSTMENT OF CUTTERS EMPLOYED BY MESSRS. GREEN ON THEIR OLDER MACHINES.

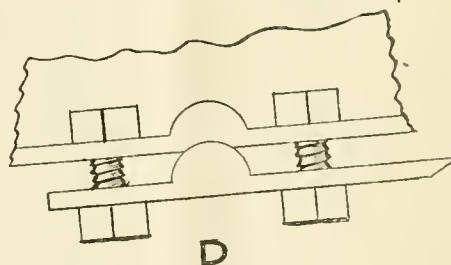


FIG. 124.—ADJUSTMENT USED BY MESSRS. RANSOMES AND CO. ON THE "LION" MOWER.

the machine, and this movement is controlled in most cases by two small screws (termed "set screws"), one beneath and one above the "brasses" mentioned. By slackening the bottom screw and tightening the top, it

will be observed the cutter is lowered; this only requires doing at long intervals if the machine is kept in good order. There are several varieties of this adjustment, some having one screw and some two. In a few of the older machines of Messrs. Green, there is only one screw beneath the cutter-spindle, and the adjustment is made by slackening this and tightening the two screws that hold the brasses in their place, consequently depressing them in their socket. This adjustment is shown by *a* and *b*, fig. 122, in its various forms, and is used by Messrs. Ransomes in a very good form, with only one screw at the top, and a spring below the cutter bearings. This is of great advantage should any object such as a stone or stick become caught by the cutter, as it prevents injury to a great extent by slightly giving way. Messrs. Green and Messrs. Shanks both employ this well-tried arrangement, which is very simple and strong; but great care should be taken to tighten each side equally, or the cutter will run stiffly, besides injuring itself and the bottom knife.

The second class of adjustment is peculiar to the side-wheel class, although in several machines, notably the higher-class machines of Messrs. Ransomes, Messrs. Shanks, and Messrs. Green, the set screw form is adopted in preference. Here the bottom knife moves instead of the cutter, this adjustment being peculiar to American and American-type machines, and one of the neatest forms is that of Messrs. Chadburn & Coldwell, which is employed on all their machines of both classes. This is shown by fig. 121, *c*, and is as follows:—The bottom blade or knife, *a*, is hinged to the frame by pivots, *b*, at each end, and has attached to it two arms or levers, *c*, which are pierced by two holes at their ends, in which a screw-thread is cut. Into these holes two screws, *d*, are fitted, which are just long enough to fill the space between the two projections, *c*, *e*, cast on the frame of the machine. Now it will be seen that as the screws, *d*, cannot move from their positions, when they are turned they move the arms, *c*, and with them the bottom blade in the direction of the arrow, which is therefore brought closer to the cutter.

Messrs. Ransomes, in "The Lion," adopt an even simpler form shown by *d*, fig. 124. Here the bottom knife is furnished with pivots or hinges of the form shown, and it will be seen that by tightening one bolt and loosening the other the knife can be set closer to the cutter.

GRASS BOXES.

Little need be said as to grass boxes, as these are not greatly varied as to fixing. Generally they fasten simply by catching against a projection on the frame on each side. As regards the larger machines, where a pony, donkey, or horse is used, as a rule it is more convenient to empty the box while the machine is at work; and one of the best plans is that used by Messrs. Shanks and others, wherein a kind of shovel is used, worked from the handles—by moving this either to the right or left the box is emptied, being open at both ends. Another method is that used by Messrs. Green, called "over-hand delivery," in which the grass box is hinged, and by moving the lever which is fitted to it (also worked from the handles) the box is turned completely over and emptied.

TO REGULATE THE HEIGHT OF THE CUT.

As regards the small roller, or the two small wheels in front of the cutter, that press the grass down, and also serve to regulate the height of the cut, there is little variety, as in

most cases they are adjusted by screws each side of the machine. Two very notable exceptions to this are, first, Messrs. Ransomes' adjustment, wherein a small hand-wheel is fitted each side of the machine, the front roller being mounted very like the manner in which the bottom knife is fitted on

MAXILLARIA FRACTIFLEXA.

OUR illustration (fig. 125) represents one of those remarkable Orchids usually denominated "botanical," a love for which, notwithstanding his high success in the cultivation of the more showy species, has been consistently

over near the base; cream-coloured, curved petals, with wart-like protuberances on the margins; and a white labellum marked with purple. It is a native of Ecuador.

HOME CORRESPONDENCE.

RE "THE NEW ORCHARD AND GARDEN."—In reply to your correspondent signing himself "B.," there is an account of this book having been published by William Lawson in 1597 in *Tracts on Practical Agriculture and Gardening*, by R. Weston, Esq., dated 1773; and he also states that another edition was published in 1623. C. Sandford.

—Replying to the enquiry for the date of publication of the *New Orchard and Garden*, by William Lawson, in your recent issue, p. 345, I have not the slightest doubt but what the date mentioned, 1597, is correct. The copy I have is dated 1623, but the author states on the title page "That this is the experience of forty-eight years' labour, and now, the second time, corrected and much enlarged by William Lawson, whereunto, is newly added the art of propagating plants with the true ordering of all manner of fruits in their gathering, carrying home, and preservation." This should prove beyond any doubt, that the first edition must have been printed some years before. The copy I have in my possession, I paid £8 10s. for. I have been very much interested in reading this old book, and the quaint way in which the author describes the best way to form a new orchard. I have several other very old books in my possession, one of which is the *Jewel House of Art and Nature*, by Hugh Platt, dated 1594. J. Basham, Bassaleg, Monmouth.

AN OLD PLANT REHABILITATED. — At the meeting of the Royal Horticultural Society on September 7, 1901, a Certificate was awarded to a handsome pot-plant bearing a name unpronounceable save by Scot or Teuton, of *Kochia scoparia*. The plant is figured in the last volume of the *Gardeners' Chronicle*, p. 359, and as it is likely to be popular for some time to come, a short *résumé* of its history may not be unacceptable. I may here interpolate the remark that I had seeds of *Kochia scoparia* sent me from the Continent about ten years ago, and as none of them germinated, I thought the seeds must have been too old; but it would appear they sometimes lie a considerable time in the soil before germinating. The fact that the plant up to about a hundred years ago was known as *Chenopodium scoparia* would, however, indicate its cultivation to be of the simplest. Italy would appear to have first discovered the adaptability of the plants to garden purposes, and there it must have been cultivated for a considerable period previous to its introduction to Northern Europe and to England, and it is curious to find it confounded with *Campanula rotundifolia* and with French Marigolds, while Des Serres writes of it as a shrub. Parkinson, who figures and describes the plant as the "Broome Tode Flax," has been credited with its introduction to English gardens; but that is more than he himself claims, for he explicitly states, after mentioning that it was cultivated in Italy, in pots, "even with us also (it) hath growne to be so dainty a greene bush," &c. So we may safely conclude it was grown in the best gardens near London and elsewhere years previous to 1629. Indeed, as early as 1578, Lyte figures and describes it; and old Gerarde, becoming quite gossipy in his remarks, gives one the impression he must have been in some degree acquainted with it—the only thing that raises a doubt in one's mind being his expressed belief that the leaves kept "greene all the winter." But it may be noted that Parkinson makes an equally strange mistake in asserting the flowers to be red. Gerarde, as usual, is lavish in names, telling us it is called in Italian "Bel-videre, or Fair in Sight," and "The Bushie, or Besome Todo

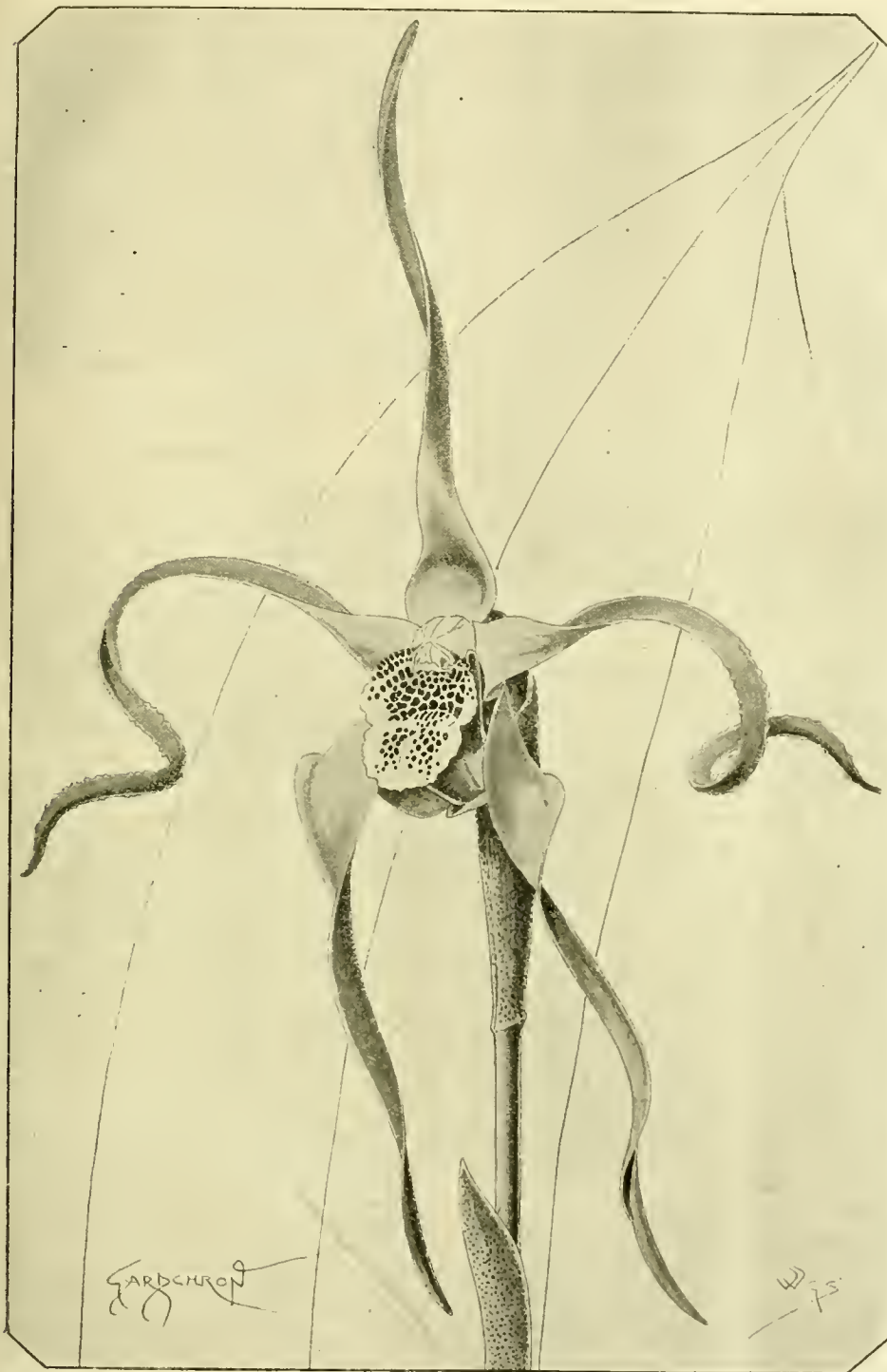


FIG. 125.—MAXILLARIA FRACTIFLEXA.

Chadburn & Coldwell's machines, previously alluded to.

The other machine is the "Godiva," made by Messrs. Barford & Perkins, which is very similar, but the regulator is worked from the handles—a very great convenience where the height has to be altered when the machine is in motion. Sydney Russell.

(To be continued.)

maintained by Sir Trevor Lawrence, Bart., the President of the Royal Horticultural Society. His remarkable group of Orchids of singular structure at the end of the great tent attracted much attention at the Temple Show.

Maxillaria fractiflexa has yellow sepals, slightly tinged with a bronzy hue, a singular feature in the lateral one being their folding

Flax." The reason he enunciates for the latter names carries with it a glimpse of a social custom of the period, for he says it received these names because it is a "fit thing to make broomes of, wherewith schollers and students may sweepe their own studies and closets." On this account it was also called "The Student's Herb." Why the plant should have been admitted among the *Linarias* is not clear, unless it was owing to the resemblance the foliage bore to Flax-leaves, just as *Aster Lino-syris* was called "Golden Toad Flax" for a like reason. Gerarde remarked the general likeness of the plant to a young Cypress-tree, and in course of time it became known as Summer Cypress, and sometimes Mock Cypress. But all through the seventeenth century it was better known as *Belvidere*, Evelyn and Rea being writers who use the latter name. In the next century, when it would appear to have been largely cultivated in pots for placing in court-yards and other prominent positions about the house and garden, the former designation was commonly used. It laid aside its generic name about the same time, and appears in *Hortus Cliffordiensis* as *Chenopodium scoparium*—*scoparia*, a very old designation, referring to its qualities as a "besom," that has stuck to it all along. It has borne its present name for nearly a century, and it is not reassuring that the plant has gone largely out of cultivation in that time. However, there is a fair supply of names to choose from, of which the above forms a selection. Personally, I should like that which has been longest known, viz., *Belvidere*. B., Tynningham.

RICHARDIA ELLIOTIANA.—In answer to your correspondent, Mr. McLeod, Dover House, Roehampton, concerning *Richardia Elliotiana*, I should like to say that I have, like him, been successful in flowering this species from seed under similar treatment to that he adopted; but in the case of a tuber of *C. Pentlandi* received from a nurseryman at Capetown more than four years ago, I have been unable to flower it, although it got stronger each year. Another plant, *Gerbera Jamesoni*, received at the same time as the *Richardia*, I have failed to flower. For the first two years it received greenhouse treatment, then I was advised to plant it outside on a warm border; but still I cannot flower it. I should be pleased to hear if any of your numerous readers have been successful in flowering the plants I have mentioned above. J. Adams, Lynchmere Gardens, Haslemere.

RAINFALL AT ISLEWORTH.—We have concluded, May 12 to 17, a period of six successive wet days—a very unusual sequence in this part of England. Throughout this period the rainfall was intermittent, and generally very light, so that the total fall only measured 0·83 inch. Early in the morning of May 14 we experienced 1° of "air" frost, which temperature continued for some hours, and injured the foliage of all Japanese Acers, and some varieties of *Platanus*. It is difficult to say exactly what amount of damage the inclement weather has done to the fruit crop. Apples and Walnuts may have suffered considerably, but on the other hand Plums give exceptional promise. Crops generally are a few days late, but by no means unpromising. The Meteorological Office gave us four hours warning before dark on May 13 to expect frost, and this enabled many delicate plants to be saved from destruction. A. Worsley, Isleworth.

THE WEATHER AND THE FRUIT CROPS.—We have experienced in this part of Kent very unseasonable weather. At 11 o'clock P.M. on May 13 the thermometer hanging in a rather sheltered position, recorded 5° of frost; and the following morning it was 10°. The damage to the fruit is phenomenal: the whole of the Strawberry-blossoms being destroyed, and a close examination of the small buds showed these also to be frozen. The majority of the Gooseberries are frozen, only those sheltered under the leaves escaping. Plums and Cherries generally are destroyed, and the Currants are

turning black. Apricots on walls are gone. The Apple-blossom appears to have been badly smitten, although the damage will be apparent later. All of the early Potatoes are destroyed. The loss to the fruit-growers in this immediate neighbourhood will be very great, and I already hear of one on this estate who roughly estimates his damage at from £500 to £1,000. Truly, fruit-growing on a large scale is a hazardous undertaking in this country. H. Walters, Eastwell Park Gardens, Ashford, Kent.

—I know not how people further south are faring as regards frost, but in this neighbourhood—North Warwickshire—we are having far too much of it. Most mornings all this month the ice on ponds has been the thickness of a good old-fashioned penny-piece. A great deal of the Pear, Plum, and Cherry-blossom has been killed; some of the earlier blooms of Apples, such as *Cellini*, are also killed. The stems of Nettles, Fool's Parsley, and such rank weeds, are in the mornings laid flat with the ground. Nothing seems to grow kindly, there being cold north-east winds, with very little sunshine, and the sky often obscured with a dark pall of what country people generally call blight—oftener "blight," notwithstanding all our improved teachings in colleges and schools! Potatoes, too, are coming through, and unless some earth is immediately drawn over them, they are blackened. If the weather did but become mild, all this might soon be forgotten; but unless we get warm, growing weather, we fear there will be a shortage of fruit, notwithstanding the very liberal and promising show of blossom. Let us hope for the best; things are seldom so bad as they might have been. W. Miller. [Since the above was penned, pleasanter weather conditions have prevailed in England. Ed.]

—One of the greatest promises of a bountiful crop of fruit in this neighbourhood was destroyed by 12° of frost on the morning of the 14th inst. Strawberries and Apples were only in bud, very few fully expanded blooms were to be seen. These, however, shared the same fate as the Pears, which were just passing out of bloom; needless to say these buds were frozen through, and as they open reveal a sad spectacle, the stigmas on the Apple are blackened, while the Strawberries are nearly all blackened too, notwithstanding a heavy crop of healthy foliage. It is eight years since we have experienced such a frost so late in the season, but then we had 15° of frost on the 19th of present month, which was an unusually early season. So far as I am at present enabled to judge, we shall have a very poor crop of fruit of any kind, except Peaches, Nectarines, and Apricots, which set a good crop some weeks since, and which have been well protected by heavy blinds, &c. Chestnuts are yet in bud only, and it will be some days before they are in bloom. T. Arnold, Cirencester House Gardens, May 22.

HARDY GERANIUMS.—Mr. Arnott has done well to bring forward the claim of the *Cranesbills* to a place in our gardens. I have grown most of them for years, and am accustomed to the surprise of visitors, first, at their beauty; and secondly, at hearing them called Geraniums. I would supplement Mr. Arnott's list by *phæum*, and far the finest of all, *platypetalum*. He may confer a favour on those whom his paper interests by telling them where to obtain seed, I think not through nurserymen's catalogues. *Corycius senex*, May 24, 1902.

LOW TEMPERATURES.—Referring to the note on "Lowest Temperatures" (p. 294), I beg to say I received on February 14, 1900, a letter dated October 30, 1899, from the meteorological station at Verchojansk (Vherk-hoiansk), with meteorological notes over 1896, and some other very interesting data. The minimum temperature occurred in February, 1892, with $-70^{\circ}\text{C.} = -94^{\circ}\text{F.} = 126^{\circ}\text{F.}$ of frost (not 122° as stated in *Nature*); maximum in summer $31^{\circ}\text{C.} = 88^{\circ}\text{F.}$ Velocity of wind

for the whole year 1·3 metre per second! this differs very little from a continual absence of wind. Winter minimum, -55°F. ; spring, 1°F. ; autumn, -1°F. ; summer, 52°F. ; only June is free of frost; July has 31°F. as the minimum. Clear days 78, clouded 67, snow-days 54, rainy days 24; the wettest month is June, the driest April. Further particulars I can supply. M. Buysman, Middleburg, Holland.

SPINACH.—The "certain Spinach," once popular, a correspondent is making enquiry about, on p. 341, is, I have no doubt, *Chenopodium bonus Henricus*, perennial Goosefoot, and more commonly known as Good King Henry. [No!] It is employed in Lincolnshire as a pot-herb, and I knew a Lincolnshire family who brought plants of it into Warwickshire, cultivated a good bed of it, and made frequent use of it as Spinach. The plant is described in Bentham's *British Flora*, and in Hooker's *Flora of the British Isles*. It is also described in Thornton's *Family Herbal*, 1810, the author describing it as Striking Goosefoot or Orach, *Chenopodium foetidum*. In Thornton's time the leaves were used as an antidote in hysteria and spasmodic complaints; leaves applied externally hasten suppuration. "Folia emolliunt, dolores sopiunt, et suppurationem maturescent." W. Miller.

Obituary.

JAMES BATLEY.—The death of the above-named gardener, at the ripe old age of eighty-two, took place on May 11 at the Gardens, Wentworth Castle, near Barnsley. The whole of his working life was spent in the services of the Vernon-Wentworth family, owners of the Wentworth Castle estates. For over forty years he was head gardener, having succeeded his father in that position. Some years ago Mr. James Batley had to resign his position from failing health, the family very kindly giving him a pension. At that time his son, Mr. George Batley, the present gardener, was his father's successor. It is an event worth noting that three generations of gardeners served the same family for a large portion of the past century. The writer of this note well remembers being sent by the late Mr. Law, gardener at Wortley Hall, in Yorks, with a note to Mr. Batley asking him to accompany him to Trentham to get the dimensions of some upright ridge and furrow Peach-cases, then much thought of by Mr. Fleming, gardener at Trentham—this was in 1857. If I remember rightly, it took two days to do this, though probably not more than 70 miles distant. As a sound, practical gardener of the old school, Mr. Batley was one of the very best. Very fine crops of fine fruit, both of Grapes, Pines, and Peaches, were annually produced at Wentworth Castle, or Stainborough Hall, as it is more familiarly known in Yorkshire. Like many more men with real horticultural grit, Mr. Batley was content to remain in what may be termed the background of gardening. All the same, he was a most intelligent, well-read, and well-informed man on all subjects connected therewith. The oaken casket that contained his mortal remains was made from timber grown on the estate where his life had been spent. I ought to mention that Mr. Batley had artistic tastes of no mean character, as some of his oil paintings will testify. H. J. C.

THOS. MARRIOTT.—We regret to announce the death at Southport on May 20 of Thos. Marriott, nurseryman and florist (the oldest in Southport), where he had resided ever since he came to Southport twenty-seven years ago. The deceased was a native of Derbyshire. He was a member of the committee of the Southport Horticultural Society, and gained many prizes at its shows. Every year he won 1st prizes for British Ferns, Cucumbers, Tomatos, and table plants, and before coming to Southport he took the leading prizes in the Nottinghamshire shows. He leaves a widow, four sons, and three daughters. The funeral was largely attended by relatives of the deceased.

SOCIETIES.

Temple Show continued from p. iv. of supplement.

CUT FLOWERS—continued.

TULIPS.

Messrs. W. CUTNUSH & SON, Highgate Nurseries, had a good collection, and it included also some florists' varieties, forms of Gesneriana and Darwin types. A few of the most striking were Beauty of America, pale primrose; Picotee, macrospila, &c., the flowers fresh and fine.

Mr. R. C. NOTCUTT, nurseryman, Woodbridge and Ipswich, also had a representative collection, fresh and bright examples prevailed; a few of the most attractive were Clara Butt, flava, Gesneriana, English rectified varieties, Parrots, &c.

Messrs. B. S. WILLIAMS & SON, Victoria Nurseries, Holloway, also had a large collection, which included Bouton d'Or, Maiden's Blush, Gold Cup, Parisian Yellow, Billettiana, crested crown, gold flamed with crimson, Mrs. Moon. This collection also included Spanish Iris, early Gladioli, &c.

Mr. H. J. JONES, Lewisham, also included Tulips in a large collection of cut flowers he staged, and included were fine examples of Billettiana, Zeno, La Tulipe Noire, quite black; Flava, Gala Beauty, and several Parrot varieties, also Anemones of the Alderborough type, Iris, Iceland Poppies, &c.

SWEET PEAS.—Collections of these were staged by Messrs. JONES & SON, nurserymen, Shrewsbury, who had good bunches of Prince Edward of York, Mrs. Eckford, Venus, Hon. Mrs. E. Kenyon, Salopian, Baden-Powell, Lady Mary Currie, Countess of Powis, Lord Kenyon, Countess Cadogan, Triumph, Navy Blue, New Countess, Gorgeous, &c., in all about thirty bunches.

Mr. ROBERT SYDENHAM, Tenby Street, Birmingham, had a selection of well-developed varieties, it included such sorts as Coccinea, Gaiety, Salopian, Miss Willmott, Lady Mary Currie, Black Knight, Lord Kenyon, Prima Donna, Lady G. Hamilton, Blanche Burpee, Hon. Mrs. E. Kenyon, &c.

Mr. C. A. WATTS, 30, Mark Lane, E.C., had some bunches of fairly developed varieties, which included Miss Willmott, Countess of Lathom, Princess Beatrice, Mars, Navy Blue, Salopian, Lady Mary Currie, &c.

MISCELLANEOUS CUT FLOWERS.

Messrs. DOBBIE & CO., nurserymen, Rothesay, had a large collection of very finely developed Fanny Pausies, including several new varieties; and also a large collection of sprays of Violas; this formed a highly attractive feature, and attention shall be called to the Fanny Pausies later on.

Messrs. W. H. ROGERS & SON, nurserymen, Southampton, had a collection of sprays of flowering shrubs, such as the newer forms of Lilacs; various Cytisus, Ceanothus papillosus, Andromeda formosa, Magnolia purpurea, Choyisia ternata, Genista praeox, &c.

Messrs. BLACKMORE & LANGDON, Madeley, had Carnation Nellie Eskris, a yellow ground Picotee; Novelty, a large striped Fancy, and a few blooms of double and single Begonias.

Mr. CAPARN, Guernsey, had various Iris, and some varieties of Sparaxis of a bright character.

Messrs. REAMSBOTTOM & CO., Gledhill, King's County, had a really superb collection of their fine strain of Alderborough St. Brigid Anemones, fresh, bright and very striking.

Messrs. GEO. BOYES & CO., Aylestone Nurseries, Leicester, had neat bunches of Carnations set up in vases with their own foliage; small flowers generally with good calyces.

Messrs. BARR & SON, in addition to their Tulips, had a charming collection of Spanish Iris, of which the following were very pretty: Sunset, California, Donna Maria, Blue Beauty; Early Gladioli, &c., also Cytisus, Trollius nudicaule Poppies, and a great assortment of hardy plants.

Messrs. R. SMITH & CO., nurserymen, Worcester, had Iris in variety, Trollius, Lupinus, Pyrethrums, Heuchera, Anemones, a few Tulips, &c.

Messrs. KELWAY & SON, nurserymen, Langport, had Paeonies, among them a very fine single white named Queen Alexandra, and a crimson named King Edward VII., Iris florentina, Pyrethrum roseum nanum, very pretty pink; Erigeron Roylei, a dwarf blue-flowered Composite and very fine; E. aurantiacus, rich yellow; Canadian Columbines in beautiful variety were also in telling masses. In the smaller things

Rosa altaica is very pretty with white flowers; and so, too, the Achillea mongolica, very free and about one foot high. The orange of Papaver pilsenum is very rich, and of other good things Aquilegia Stuarti, Saxifraga pyramidalis, S. Macabiana, Cheiranthus alpinus, and Iberis Little Gem are worthy of note in a very fine lot. Many Tulips, Irises, and such things as Pyrethrums were also set up.

Messrs. WALLACE & CO., Colchester, had a display of hardy things that may be described as well high unique. Indeed the Lilies, the hardy Cypridium, the Calochortus alone were a feature, and attracted a good deal of notice. It is not possible to enumerate anything approaching a full list of the plants shown, but among the more telling we noted Brodiaea coccinea, Tulipa persica, Sparaxis Five King with flame scarlet and black petals and gold centre. Among the hardy Orchids were Cypridium spectabile, C. pubescens, C. occidentale, C. aculea, &c., and associated with the native American Fern, Adiantum pedatum were very beautiful; the Calochortus, too, were very fine, beautiful in blossom, and in their great variety, free, graceful in bearing, the large open cups of alabaster and mahogany naturally caught the eye. Lilies, too, were also good, such as L. excelsum, L. Dalhousie, L. Martagon, L. Hansonii, L. rabellum; and a great wealth of flowers of the Thunbergianum and dauricum groups. Cushion Irises were also good and numerous, such as I. lupina robusta, I. Barmuse, I. atro-purpurea, I. Sohrana, and I. s. magnifica, the latter like a glorified I. atrofusca; Tulips, Spanish Irises, Ixias and Sparaxis were also in great force, and made a rich display of colour in one of the most interesting groups in the exhibition.

Mr. AMOS FERRY, Winchmore Hill, also set up a splendid lot of things, filling some 100 feet of tabling. A feature in this group was the Eremurus, E. himalaicus, strongly represented by a dozen fine spikes. And in less quantity, the pink flowered E. robustus. In this lot many things were shown en masse, as e.g., Ramondia pyrenaica, Lewisia rediviva, Thalictrum orientale, a good white; Anchusa angustifolia, rich gentian blue; Incarvillea Delavayi and others. Of interesting things in smaller compass we noted Lithospermum canescens, Codonopsis viridiflora, Lathyrus azureus, Eoothera speciosa rosea, Oxalis cuneifolia, a rare species with white flowers; Townsendia grandiflora, a white, gazania-like flower, which should make a capital rock plant. Dracocephalum nutans alpinum is a fine piece of blue not more than one foot high, and most telling. Alpine Phloxes and many other showy things were also in this lot.

SOME EXHIBITS OUT-OF-DOORS.

The pretty little hardy Daphne Cneorum was well shown by Mr. A. KNOWLES, Horsell Birch Nursery, Surrey.

Two very fine plants of Cocos Yatay were exhibited by Messrs. SANDER & SONS, St. Albans.

Mr. JNO. RUSSELL, Richmond Nurseries, Surrey, had a large group of hardy trees, shrubs, and other plants, including many choice species and varieties, as Dimorphanthus mandschuricus foliis variegatis, &c.

Mr. S. BINE, Alma Nursery, Farnham, had a group of plants composed of Yucca aloefolia variegata, and Dimorphanthus mandschuricus fol. argenteus marginata.

Japanese Maples, observable in many exhibits, were the subject of a group of plants from Messrs. T. CRIPPS & SONS, Tunbridge Wells, in which a great number of varieties were represented.

Messrs. R. SMITH & CO., Worcester, had small plants of choice varieties of Conifers lifted from the open their roots contained in mats.

A very imposing group of plants out-of-doors, but placed in somewhat an out-of-the-way spot, was one from LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton (gr., Mr. J. Hudson). This consisted of mammoth plants of scented-leaved Pelargoniums, trained in the shape of fans, balloons, &c., as shown in our Supplementary Illustration, April 19, 1902. They attracted much attention, as did the very large specimens of white-flowering Marguerites. Several new Nymphaeas were exhibited in conjunction with these, as Mrs. Ward, rose colour; W. Stone, blue; and the N. stellata Berlin var. One of the former varieties was awarded a First-class Certificate.

Messrs. JAS. VEITCH & SONS had a group of Bamboos, and a bed was planted with Primula imperialis (yellow), and P. japonica (purple).

The exhibitors of clipped trees had this year to compete against others showing specimens of the Japanese dwarfed trees, and between them they were very

curiously inspected by a large proportion of the visitors. The largest collection of clipped trees, representing animals, birds, and objects, was again shown by Messrs. W. CUTNUSH & SON, Highgate Nurseries, London, and a very representative lot they were. Of the Japanese type, which are merely dwarfed or "nanized," the largest collection came from Messrs. BARR & SONS, King Street, Covent Garden, London, who built a neat tent in which to display the plants.

Messrs. JAS. CARTER & CO., High Holborn, London, had also a moderate-sized collection in a kind of annexe to one of the tents. Another exhibit of the same type was from Mr. S. EIDA, 5, Conduit Street, Regent Street, W.

Messrs. FROMOW & SONS, Nurseries, Sutton Court Road, Chiswick, showed out-of-door picture plants in pots in considerable numbers. We remarked specimens of most of the varieties of Japanese Acers, both green and other coloured. Acer sanguineum variegatum is a distinct variety, as are likewise A. roseum marginatum and A. palmatum coralium, one of the small-leaved varieties. The group was edged with Aralia pentaphylla, a hardy species, with white and green variegated foliage. The plants were in almost all cases of free, vigorous growth.

MISCELLANEOUS EXHIBITS.

Messrs. JAMES VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, exhibited a group of miscellaneous plants in the Orchid tent. The plants were all, or most of them, out-of-door species. The sloping surface of the group was broken by spikes of Eremurus himalaicus, and the small but pretty yellow species, E. Bungei. The group was composed of such a quantity of choice plants, every one of which would bear close inspection, it is possible that many of them were overlooked by visitors. There were very large plants of Weigela, Madame Conturier, and Eva Rathke. Rhododendrons Prometheus, W. E. Gladstone, a charming variety, in which the colour is very beautifully shaded, and other varieties; Wislitzia multijuga, W. sinensis, and W. s. alb. Veronica Hulseana, 2½ ft. high, with long racemes of small, very pale-coloured flowers; Alstroemeria aurantiaca, A. pelegriana rosea, Hydrangea Miesii, H. japonica variegata, leaves variegated with white; H. hortensis rosea, Andromeda speciosa cassinifolia, Ceanothus Veitchianus, Magnolia Watsoni, M. Lennae, Tree Paeonies Madame Stuart Low and Reino Elizabeth, both pretty and richly coloured varieties; Japanese Acers, Viburnum plicatum, Azalea rosea, fl.-pl.; Kalmia latifolia, Ghent Azalea Fama, an extremely large plant of a very beautiful rose coloured variety; Philadelphus erectus, Hibiscus grandiflorus superba, and other species.

Messrs. J. VEITCH & SONS also showed a nice group of plants of the bright flowered Kalanchoe flammea, and a group of plants of Schizanthus Wisetonensis.

Messrs. W. BALCHIN & SONS, Haseocks Nurseries, Sussex, again showed some of the choicer greenhouse plants, in the cultivation of which they succeed so well. These included the new Erica propendens, with mauve-coloured flowers; Richardia Elliotiana, Boronia heterophylla, Leschenaultia biloba major, Boronia clatior, Genetyllis tulipifera, Erica Speuceri, Aphelexis humilis, and the Posequeria longidora, with white, tubular flowers.

Mr. K. DROST, Richmond, Surrey, exhibited a large group of Lilium longiflorum in full flower, very well-grown specimens.

Mr. W. R. NEWPORT, Hillingdon Heath, Uxbridge, exhibited the violet-purple flowered Lobelia Newport's Model.

Messrs. WATKINS & SIMPSON, 12, Tavistock Street, Covent Garden, London, W.C., exhibited a group of plants of Lantanas, and recommended them as bedding plants. These were in 3-inch pots, and represented the colours orange, pink, white, yellow, mauve, &c.

Messrs. F. SANDER & CO., St. Albans, Herts, exhibited a group of Orange-trees (Citrus sinensis) in pots, bearing abundant fruits, also some like plants of Dimorphanthus mandschuricus foliis variegatis, and a few pretty varieties of Caladium.

Lilies of the Valley were exhibited by Mr. WILLIAM ICETON, of Granard Nurseries, Putney Park Lane, London, S.W., who showed some very strong plants from retarded crowns forced in boxes. Mr. W. POUTART, Twickenham, who had flowers from the open ground; and Mr. T. JANSOCH, Derlington, Norfolk, who, in addition to Lilies of the Valley, showed flowering sprays of single and double Lilacs.

Messrs. JAS. VEITCH & SONS, in addition to exhibits

remarked upon elsewhere, had a very fine display of their strains of *Streptocarpus* in several colours.

Messrs. JAS. CARTER & Co., showed pretty groups of stellate flowered *Cinerarias*, and a very fine show of single and double flowered *Petunias*, another of *Schizanthus*, &c.

Messrs. W. & J. BROWN, Peterborough, had a group of well-grown plants, including *Carnations*, *Heliotropes*, bedding *Pelargoniums*, &c.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq., Chairman; and Messrs. G. T. Miles, George Woodward, W. Bates, A. H. Pearson, Jos. Cheal, W. Poupert, A. Ware, John Basham, W. Fyfe, F. Q. Lane, J. Willard, S. Mortimer, Geo. Bunyard, Geo. Wythes, Thos. Coomber, Geo. Reynolds, H. Markham, W. H. Divers, Geo. Kelf, J. Jaques, H. Balderson, W. Iggulden, W. Pope, H. Eslings, and Alex. Dean.

FRUITS.

Placed in the great tent amidst masses of brilliantly coloured flowering plants, and there, to some extent, in apparently incongruous surroundings, were two fine collections of fruit-trees in pots. First, and standing at one end of the central stage, otherwise filled with Orchids, was a collection of some thirty *Cherries* in pots, the trees averaging 6 feet in height, and abundantly fruited, from Gunnersbury House Gardens, Acton, the residence of LEOPOLD ROTHSCHILD, Esq., Mr. Hudson, the gardener, showed by these trees how admirably *Cherries* can be grown under glass, and presented to table in a delightfully attractive way. The varieties were Governor Wood, Early Bigarreau, Frogmore Early, Empress Eugénie, Belle d'Orleans, Guigne d'Annonay, and the fine black Bigarreau de Schrekén; also fruits of Early Rivers' Nectarine in baskets. Fronting the trees and set in a margin of foliage plants were in one basket, fine Cardinal Nectarine, Transparent Gage Plum, and Royal Sovereign Strawberry; and in the other, fine fruits of *Cherries* Governor Wood and Early Bigarreau, white; and May Duke and Bigarreau de Schrekén, dark. Also good bunches of Black Hamburgh and Early Auvergne Frontignan Grapes. There was also a good bunch of home-grown Bananas.

Messrs. T. RIVERS & SONS, Sawbridgeworth, also had on one side of the great tent a collection of chiefly their superb Nectarines, Cardinal and Early Rivers; also Peaches Duke of York, Hale's Early, Early Rivers, and Duchess of Cornwall, and Cherry May Duke. There were some thirty of these trees, all heavily fruited, in the group. There were also large baskets of Cardinal and Early Rivers Nectarines, and Prince Edward and Early Rivers Peaches, all very fine. Naturally, this group suffered somewhat from being bordered by brilliant-flowering plants. One other collection in pots was of Oranges, staged by Messrs. SANDER & SONS, St. Albans. There were twenty-five of these, some 2½ feet in height, all heavily fruited, and presenting a very ornamental appearance. The variety was the small-fruited *Citrus sinensis*.

Dish Collections.—Of dessert fruits there were two very fine and admirably staged collections, coming respectively from Ashstead Park, Surrey, and Buscot Park, Berks. The first-named set up by Mr. G. Hunt, gr. to PANTIA RALLI, Esq., included three tall branched stands, the central one being 3 feet in height, the end ones being rather lower. These were dressed with Hamburg Grapes, Melons, Royal Sovereign Strawberries, *Cherries*, Peaches, and Nectarines. Also on wicker stands were Melons, Sutton's Ringleader, Best-of-All, The Countess, Royal Favourite, and Ashstead Park. Peaches, in plates, were Early Grosse Mignonne, Brown Turkey Figs, very fine; Royal Sovereign Strawberries, several unnamed Apples, &c., the whole comprising thirteen dishes in addition to the stands.

The collection from Buscot Park, Faringdon, Berks, the residence of ALEX. HENDERSON, Esq., M.P., whose gardener, Mr. W. L. BASTIN, made an excellent show. The central figure was a board covered with a white paper and some 3 feet wide, on which were fixed eight bunches of Foster's Seedling Grape, dressed with sprays of *Asparagus plumosus*. On either hand were four branched wicker stands. Of these two were dressed with nice fruits of Melons Hero of Lockinge and Earl's Favourite, the other pair containing Cardinal Nectarines, very fine; Brown Turkey Figs, and Alexander Peaches; also on small stands and in dishes were Queen Pines, Buscot Park Hero Melons, Mayduke and early Rivers *Cherries*, Royal Sovereign Strawberries, and several diverse Apples, generally good samples.

Mr. W. ALLAN, gr. to LORD SUFFIELD, Gunton Park, Norwich, had a group of eighteen plants of his new Strawberry, Gunton Park. Each plant carried ten

fruits in various stages of development. The fruits are medium-sized, narrow, and pointed, of a very dark colour, and were of excellent flavour.

APPLES.

There were two large collections of these, all of course, late kept fruits, some of them, however, being much past their best. A fine one of ninety-five dishes came from Messrs. G. BUNYARD & SONS, Maidstone. A central feature was a wicker stand, on which were fine dishes of Winter Peach, Baldwin, and Wagener, and immediately fronting it was a basket, for the time of year, of exceptionally fine Bismarck. A dressing of *Asparagus Sprengeri* and variegated Vine added much charm to this arrangement of dishes.

Of dessert varieties there were capital Norman's Pippin, Swedish Reinette, Baxter's Pearmain, Lord Burghley, Allen's Everlasting, Lausberger Reinette, Blenheim Orange Pippin, Hubbard's Pearmain, Christmas Pearmain, Calville Blanche, Claygate Pearmain, Rambour Papelen, Foster's Seedling, and Washington. Of cooking Apples, Annie Elizabeth, Calville des Femmes, Lane's Prince Albert, Tibbet's Pearmain, Gloria Mundi, Wadhurst Pippin, Alfriston, Belle Pontoise, Lord Derby, and Sandringham, were all good.

The other collection, one of ninety-eight dishes and baskets, came from Mr. J. WATKINS, Withington, Hereford. The fruits generally showed rich colour. In flat baskets were Wagener, Bess Pool, Belle de Pontoise, Beauty of Kent, Graham, Lord Beaconsfield, Striped Beefing, and Murrill's Seedling. In dishes were very good Ribston Pippin, Prince Imperial, Randolph, like a red cider Apple; Wadhurst Pippin, Bramley's Seedling, Browlee's Russel, Baxter's Pearmain, Brabant Bellefleur, Barnack Beauty, Winter Peach, Sturmer Pippin, Mannington, Court Pendu Plat, Rosemary Russet, and others.

VEGETABLES.

Tomatoes and Cucumbers were finely shown from Farnham, Surrey, by Mr. G. MORTIMER. The Tomatoes, shown in dishes, included Sutton's A1, Abundance, Winter Beauty, Prince of Wales, Eclipse, Best-of-All, Perfection, Futurity, small cluster variety; Large Red, Up-to-Date, Supreme, and Hipper L. (2), a very handsome but smallish red-fruited variety. The Cucumbers, all very handsome fruits, were shown in half dozens in boxes, and comprised Sensation, Express, Epicurean, Improved Telegraph, Mortimer Approved, Tender-and-True, Verdant Green, Prizewinner, Lockie's Perfection, and British King (new) from Sensation crossed with Famous, of which twelve fruits were staged, and a single stem showing eight fruits as evidence of productiveness.

G. W. SEARLE, Esq., Harrow (gr., Mr. A. Hornsby), showed three over-large fruits of Cucumber Sutton's A1, and very good Perfection Tomatoes.

A very handsome Cucumber, in quantity very like Lockie's Perfection, but longer, named Commonwealth, came from Mr. J. UPTON, Irlam, Manchester.

Asparagus of remarkably fine growth were the bundles of *Asparagus* from Colchester. Mr. W. GONFREY, of Magdalen Street, having six; and Mr. HARWOOD, of St. Peter's Street having five. The stems were some 12 inches long and very stout. Possibly much of the base was hard and inedible, but the sample was of the finest market order.

COLLECTIONS OF VEGETABLES.

Rarely has anything in vegetables been seen at a Temple Show superior to the splendid collection of seventy-two dishes of first-class produce, staged from Aldenham House, Elstree, Herts, the residence of LORD ALDENHAM, by his lordship's gardener, Mr. E. Beckett. Good features at the back of the collection were mounds of Caulflowers, Extra Early Forcing and Defiance Forcing. Broccoliis, Carter's Summer Model and Late Queen, and cones of Mustard and Cress in growth. There were good fruits of Cucumbers, Hero of Mafeking, Marquis of Lorne, Premier, and Ideal, all very handsome, also Peas, Early Morn, Early Forcing, and superb pods of the new Edmund Beckett. Tomatoes, Earliest of All, Peachblow, A1, Eclipse, Dwarf Gem, Perfection, very fine; Prince of Wales, Winter Beauty, Best of All, Golden Cluster, and Blenheim Orange. Of Beans, Early Mazagan, Green Longpod, and Leviathan; and of Kidney Beans, Canadian Wonder, Ne Plus Ultra, Osborne's Early Forcing, and the golden-podded Centenary. Of Potatoes, First Crop, Snowdrop, Sharpe's Victor, and May Queen; Marrows, Moore's Cream, Custard Marrow, Prince Albert, Muir's Hybrid, and Perfection; Green Round and Ellam's Early Cabbages, Early Gem and Holborn Forcing Carrots; red and white, long, and

round Turnips, rooted Beets; Radishes, Lettuces, Onions, Leeks, *Asparagus*—all made up a beautiful collection, not only pleasingly arranged, but also well furnished with colour.

Messrs. CANNELL & SONS, Swanley, Kent, showed boxes of Peas in fine pod. The boxes were 3 feet long, 1 foot wide, and 9 inches deep; each carried a single row of Peas, that had been trained up to sticks and string, 3 feet in height. The varieties were King Edward VII., Duke of Norfolk, and The Duchess, the latter having the finest pods. The method of growing was very profitable evidently, for the crops were excellent in each case. The firm also showed their excellent Defiance Cabbage in good form, huge Champion and Mammoth Leeks, Model Broccoli, several varieties of Potatoes, Tender-and-True Cucumbers, and Carrots.

Messrs. JAS. CARTER & Co., High Holborn, had several flat baskets filled with good market samples of Tomato Duke of York, Peas Telephone and The Daisy; Beans Canadian Wonder and Masterpiece, the latter much like the old Caseknife; Cucumber Telegraph, and Blenheim Orange Melon; also a few broad pans of their Dwarf Forcing Pea.

AWARD OF MERIT.

Cucumber British King, from Sensation x Famous.—Fruits long, very green, handsome, black short spine, very prolific. Should make a first-class market variety. Mr. S. MORTIMER, Rowledge, Farnham.

Awards by the Council.

(The names are arranged indiscriminately.)

GOLD MEDAL.

Messrs. J. Veitch, for Caladiums, Caeti, &c.
Messrs. Barr, for Alpines, Herbaceous Plants, &c.
Messrs. Fisher, Son & Sibray, Hardy Trees and Shrubs.

Messrs. Paul & Son, for Roses, &c.
Messrs. Sander & Sons, for Orchids and Caladiums.
Messrs. Rivers, for Fruit.
Leopold de Rothschild, Esq., for Fruit Trees, &c.

SHERWOOD CUP.

Fisher, Son & Sibray.

SILVER CUP.

Lord Aldenham, for Vegetables.
Sir Fred. Wigan, Bart., for Orchids.
Pantia Ralli, Esq., for Fruit, &c.
Capt. G. L. Holford, C.I.E., M.V.O., for Amaryllis.
J. Colman, Esq., for Orchids.
T. S. Ware, Ltd., for Herbaceous Plants and Alpines.
H. Cannell & Sons, for Cannas, Begonias, &c.
W. Balchin & Sons, for Ericas, &c.
W. Cutbush & Sons, for Clipped Trees, &c.
R. & G. Cuthbert, for Azaleas, &c.
R. Wallace & Co., for Lilies, Irises, &c.
A. J. A. Bruce, for Sarracenias.
J. Charlesworth & Co., for Orchids.
W. Paul & Son, for Roses.
C. Turner, for Roses, &c.
Amos Perry, for Hardy Plants.
M. Pritchard, for Hardy Plants.
G. Bunyard & Co., for Apples.
T. Cripps & Son, for Maples.
J. Cheal & Sons, for Alpines and Shrubs.

SILVER-GILT FLORA MEDALS.

Messrs. Carter & Co., for Calceolarias, Vegetables, &c.
Messrs. J. Hill & Son, for Ferns.
Messrs. G. Jackman, for Clematis, &c.
Messrs. H. J. Jones (Lewisham), for Begonias, &c.
Messrs. Hugh Low & Co., for Orchids, &c.
Messrs. Dobbie & Co., for Pansies, &c.
Messrs. R. Smith & Co., for Clematis, &c.
Messrs. J. Peed & Son, for Caladiums, &c.
Messrs. W. Fromow & Sons, for Maples.
G. Mount, for Roses.
J. Waterer & Son, for Rhododendrons.
Messrs. Stanley, Ashton & Co., for Orchids.
J. Cypher, for Orchids.
Leopold de Rothschild (Ascot), for Carnations.
J. Backhouse & Son, for Ferns.

SILVER-GILT KNIGHTIAN MEDALS.

John Watkins, for Apples.
S. Mortimer, for Cucumbers.

SILVER-GILT BANKSIAN MEDALS.

B. S. Williams & Son, for Orchids, &c.
John Russell, for Trees and Shrubs.
R. Davis & Sons, for Begonias.
Kelway & Son, for Pæonies.
W. Iceton, for Lilies of the Valley.
Reamshotbottom & Co., for Anemones.
W. J. Burkenshaw, for Orchids.

SILVER FLORA MEDALS.

W. H. Rogers & Son, for Rhododendrons.
J. R. Box, for Begonias.
Benj. Cant & Sons, for Roses.
P. Eida, for Dwarf Trees.
J. Laing & Sons, for Streptocarpus.
Ch. Vuylsteke, for Orchids.
Frank Cant & Co., for Roses.
J. Cowan & Co., for Orchids.
L. Linden, for Orchids.
J. Rutherford, M.P., for Orchids.
R. J. Farrer, for Alpine Plants.
J. J. Upton, for Gloxinias.

SILVER KNIGHTIAN MEDAL.

A. Henderson, M.P., for Fruit.
W. Godfrey, for Asparagus.
Lord Suffield, for Strawberries, &c.

SILVER BANKSIAN MEDALS.

Jones & Sons (Shrewsbury), for Sweet Peas.
W. J. Godfrey, for Poppies.
A. J. Harwood, for Asparagus.
T. Jannoch, for Lilies of the Valley.
Misses Hopkins, for Rock Plants.
Blackmore & Langdon, for Begonias.
Storrie & Storrie, for Azaleas, &c.
L. J. Ching, for Ferns.
Hon. A. H. P. Montmorency, for Tulips.
R. C. Notcutt, for Cut Flowers.
W. J. Caparne, for Irises, &c.
K. Drost, for Lilies.
A. Meyers, for Calceolarias.
W. & J. Brown, for Heliotropes, &c.
R. H. Bath, for Carnations, &c.
R. Sydenham, for Sweet Peas.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

THE sixty-third Anniversary Festival of this charitable Institution, for the benefit of gardeners when in necessitous circumstances, was held on Wednesday evening last at the Whitehall Rooms, Hôtel Métropole, London, his Grace the Duke of Marlborough, P.C., in the chair. The guests numbered one hundred and fifty-eight, amongst whom we remarked Lt.-Col. Pilkington, Rev. J. H. Pemberton, the Archdeacon of London, Ven. W. M. Sinclair; L. Schabe, Esq., and Messrs. A. Brassy, H. J. Veitch, W. Nutting, G. Munro, H. B. May, J. Sweet, G. Rochford, W. Atkinson, G. A. Dickson, A. H. Rivers, P. R. Barr, O. Thomas, J. Douglas, &c. Dinner over, the usual loyal toasts were proposed by the Chairman, who alluded to the well-known devotion of His Majesty the King to good work, and he also found time to interest himself in horticulture, especially the cultivation of flowers. The Chairman incidentally alluded to the probable termination of the war in South Africa on the occasion of His Majesty's Coronation.

The toast was drunk enthusiastically by all present and with musical honours. Then followed the toast of "Her Majesty the Queen, the Prince and Princess of Wales, and other members of the Royal Family." The toast of the evening, that of "The Gardeners' Royal Benevolent Institution," was then proposed by the Chairman, who said that it was for the continued success and usefulness of the Institution that he consented to take the chair on that occasion, and advocate the claims of the Institution on the benevolence and charity of those assembled around him, in affording relief to gardeners and gardeners' widows in necessitous circumstances, without reference to creed, be they natives of England, Scotland, Ireland, or Wales. Without gardeners there could be no Temple Show. He speculated as to what kinds of flowers attracted his audience most; for himself he liked them all. The fashion at present was in favour of exotics—meaning tender species; but he thought that hardy plants were more satisfying, and especially the fine old species grown years ago in our gardens. The Institution had expended in monetary relief in the sixty years of its existence more than £100,000, and he alluded to the benefits of the Institution to gardeners, and in this connection mentioned the object of the Samaritan Fund. The Institution spends more than its annual income, and must therefore depend in a measure on the generosity of its friends, and be dwell on the benefits that gardeners and gardening conferred on the country. The Chairman coupled with the toast the name of Mr. H. J. Veitch.

Mr. Veitch, in the course of his remarks, alluded to the recovery of Mr. G. Munro from the illness which last year prevented his being present at the annual festival, and deplored the absence of Mr. N. N. Sherwood, another generous patron of the Institution, who had been very ill, but whose health was improving. There were now, he said, 190 male and 87 female pensioners on the funds, and he gave some striking instances of longevity in these persons, one having

enjoyed a pension for twenty-four years, although at the time he was elected he was in very feeble health. Mr. Veitch described the motives that led to the establishment of the Samaritan Fund, and gave instances of assistance being most opportunely afforded. The toast of "Horticulture" was spoken to by Lt.-Col. Pilkington at some length.

The Secretary then read out a list of amounts subscribed on the occasion, mentioning £25 from the Chairman; L. Rothschild, Esq., 100 gs.; Baron Schroder, £50; M. J. Sutton, Esq., £50; N. N. Sherwood, Esq., 25 gs.; H. J. Veitch, Esq., 25 gs.; and Lt.-Col. Pilkington, £25, the total amounting to the sum of £1800.

THE KEW GUILD.—The annual meeting of the members of the Kew Guild was held on Tuesday evening last at the Holborn Restaurant. Mr. GEORGE NICHOLSON, President, was in the Chair. The Committee's report, read by the Secretary, Mr. W. WATSON, showed the finances of the Guild to be very satisfactory. Several changes in the executive have taken place, owing to the retirement of Mr. NICHOLSON from the presidency. Mr. W. WATSON, Curator, was elected President; Mr. W. J. BEAN will edit the Guild Journal, and Mr. WINN is Secretary. A very hearty vote of thanks was passed to Mr. NICHOLSON for the help and kindness he has always extended to Kew men whilst he filled the position of Curator, and for the interest he had shown in the Guild itself. There was a suggestion by the Committee that a benevolent fund should be formed, and after some little discussion, it was left to the Committee to consider the matter during the coming year, and if thought expedient present a scheme for the consideration of the next general meeting. The subsequent Dinner was very much better attended than the meeting. The chairman was Mr. J. G. BAKER, F.R.S., and he was supported by the Director, Sir W. T. THISELTON-DYER, K.C.M.G., and about 120 members, including the present staff at Kew, and a number of "past" ladies and men. There were few toasts. That of "The KING" having been heartily celebrated, the Chairman made a very interesting speech in proposing "The Kew Guild." He referred to certain events that had taken place since the last dinner, and said that after the directors of Kew had acted as advisers to the Colonial Government for half a century, the fact was only properly recognised a few days ago by the formal appointment of Sir W. T. THISELTON-DYER to the position. Reference to Mr. NICHOLSON's retirement afforded the Chairman an opportunity to express the unanimous feeling of respect and gratefulness the members feel for their late Curator, and sympathetic reference was also made to Mr. J. R. JACKSON, who has retired from the Curatorship of the Museums after completing his years of office. The Chairman said some interesting things of the colonies of South Africa and St. Vincent, which at the present time are so vividly before the attention of the Empire, and incidentally mentioned the fact that Mr. MEDLEY WOOD had continued his work upon the important book, *Natal Plants*, during the whole time that Natal and adjoining colonies have been menaced by war. We can only give one more word of Mr. BAKER's, and this was one of advice to young members of the Guild. "In all your work," said he in fervid tones, "practise conscientiousness and method." Mr. W. GOLDRING made an interesting speech in response to the toast. Sir W. T. THISELTON-DYER, K.C.M.G., proposed "The Chairman," and in the course of his remarks spoke very highly of Mr. BAKER's services to Kew and to botany during so many years. Mr. HERBERT SCHARTAU was responsible for the musical arrangements, and the evening was spent very

pleasantly. Mr. W. WATSON, who as Secretary had to do most of the work in connection with the promotion of the dinner, was doubtless gratified at the result, but it was regretted that several gentlemen who had been invited to share the hospitality of the Guild were unable to be present.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period May 18 to May 24, 1902. Height above sea-level 24 feet.

| 1902. | DIRECTION OF WIND. | TEMPERATURE OF THE AIR. | | | | TEMPERATURE OF THE SOIL AT 9 A.M. | | | |
|-------------------|--------------------|-------------------------|-----------|-------|--------|-----------------------------------|-----------------|-----------------|------------------------------|
| | | At 9 A.M. | | DAY. | NIGHT. | RAINFALL. | | | LOWEST TEMPERATURE ON GRASS. |
| | | Dry Bulb. | Wet Bulb. | | | At 1-foot deep. | At 2-feet deep. | At 4-feet deep. | |
| MAY 18 TO MAY 24. | | | | | | | | | |
| SUN. 18 | N.W. | 48° 3 | 42° 8 | 55° 1 | 42° 2 | 0° 03 | 50° 0 | 49° 3 | 48° 6 |
| MON. 19 | N.W. | 47° 9 | 42° 7 | 52° 4 | 41° 0 | 0° 07 | 50° 0 | 49° 8 | 48° 6 |
| TUES. 20 | N. | 46° 2 | 40° 5 | 50° 0 | 39° 9 | ... | 49° 7 | 49° 5 | 48° 8 |
| WED. 21 | N. | 49° 9 | 43° 1 | 55° 1 | 42° 3 | ... | 49° 5 | 49° 5 | 48° 9 |
| THU. 22 | S.W. | 53° 6 | 46° 6 | 56° 7 | 73° 9 | 20° 26 | 50° 0 | 49° 6 | 49° 0 |
| FRI. 23 | N.W. | 56° 4 | 54° 5 | 62° 4 | 49° 5 | 0° 02 | 51° 2 | 50° 0 | 49° 0 |
| SAT. 24 | W.N.W. | 61° 3 | 56° 0 | 69° 3 | 46° 2 | ... | 52° 2 | 50° 3 | 49° 1 |
| MEANS | ... | 51° 9 | 46° 6 | 57° 3 | 42° 9 | 9° 08 | 50° 4 | 49° 7 | 48° 9 |

Remarks.—The first part of the week was dull and cold; the latter part has become brighter, warmer, and more seasonable.

THE WEATHER IN WEST HERTS.

THE temperature continued very low until after the 22nd, when a change to warmer weather took place. On the warmest day the temperature in the screen rose to 70°, and on one night the lowest reading indicated by the exposed thermometer was 50°. On the other hand, on another night since the change to warmer weather, the same thermometer fell to within 3° of the freezing point. Since the beginning of the week the temperature of the ground at 2 feet deep has risen 4°, and at 1 foot deep as much as 5°, and at the present time is at about a seasonable temperature at the former depth, and about 3° higher than the average at 1 foot deep. Rain was deposited to the depth of nearly half an inch on the 22nd, but since then no rain at all has fallen. On the 22nd the rain began to fall soon after 2 P.M., and continued without intermission until nine o'clock the next morning, but at times the fall amounted to little more than a drizzle. On two consecutive days no sunshine at all was recorded, but on the remaining five days the sun shone on an average for nearly nine hours a day. The wind was mostly very light. On two days the air was humid for the time of year, but during the rest of the week continued unusually dry. The first Rose to flower in the open ground in my garden was *Rosa alpina*, which first showed an open blossom on the 24th, or four days earlier than last year. E. M., Berkhamsted, May 27, 1902.

MARKETS.

COVENT GARDEN, May 29.

FRUIT.—AVERAGE WHOLESALE PRICES.

| s.d. s.d. | | s.d. s.d. | |
|---|----------|----------------------------------|-----------|
| Apples, Australian, Tasmanian, and Victorian, per case... | 9 0-12 0 | Grapes, Muscats, A., per lb. ... | 4 0-5 0 |
| Apricots, per box | 0 9-1 0 | — B., per lb. ... | 2 0-3 0 |
| Bananas, bunch | 6 0-10 0 | Lemons, per case | 7 6-20 0 |
| — loose, p. doz. | 1 0-1 6 | Mangoes, per doz. | 4 1-6 0 |
| Cherries, per box | 1 0-1 6 | Melon-Pears, doz. | 2 0-3 0 |
| — pecks ... | 4 6-7 0 | Meat, each ... | 1 0-2 0 |
| — sieve ... | 7 0-10 0 | Nectarines, A., per dozen | 6 0-12 0 |
| Figs, per dozen | 2 0-5 0 | — B., per dozen | 2 0-4 0 |
| Gooseberries, per peck ... | 2 6-3 0 | Oranges, per case | 15 0-20 0 |
| — sieve or half bushel ... | 5 0-6 0 | Peaches, A., per dozen | 8 0-15 0 |
| Grapes, new Ham-burgh, per lb. | 3 0-4 0 | — B., per dozen | 2 0-5 0 |
| — B., per lb. | 1 0-2 0 | Pines, each ... | 3 0-4 0 |
| | | Strawberries, A., per lb. | 2 6-3 0 |
| | | — B., per lb. | 1 0-1 6 |

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

| | s.d. | s.d. | | s.d. | s.d. |
|---------------------------------------|------|------|--------------------------------------|------|------|
| Arums, per doz. | 4 0 | 6 0 | Marguerites, Yellow, per doz. | 1 6 | 2 0 |
| Asparagus Fern, per bunch | 1 6 | 2 6 | Mernet Roses, p. bunch | 2 0 | 5 0 |
| Azaleas, per doz. | 4 0 | 6 0 | Mignonette, per dozen bunches | 3 0 | 6 0 |
| Carnations, bunch. | 1 0 | 2 6 | Narcissus, p. doz. | 1 0 | 2 0 |
| — Malmaison, per dozen | 3 0 | 4 0 | Narcissus, Double, dozen bunches | 3 0 | 4 0 |
| Cattleyas, per doz. | 9 0 | 12 0 | Peonies, per doz. bunches | 4 0 | 6 0 |
| Corn Flower, blue, dozen bunches | 2 0 | 3 0 | Pelargoniums, Scarlet, p. doz. | 6 0 | 9 0 |
| Eucharis, per doz. | 3 0 | 4 0 | Pinks, per dozen | 3 0 | 4 0 |
| Forget-Me-Not, p. d. bunches | 2 0 | 2 6 | Roses, Maréchal Niel, per bunch | 2 6 | 3 0 |
| Gardenias, p. doz. | 1 0 | 1 6 | Roses, Red, general, per doz. blooms | 1 0 | 1 6 |
| Gladiolus, The Bride, p. doz. bunches | 8 0 | 10 0 | Roses, White, per bunch | 1 6 | 3 0 |
| Gypsophylla, per bunch | 0 4 | 0 6 | Smilax, p. bunch | 1 6 | 3 0 |
| Iris, per dozen | 0 6 | 1 0 | Tulips, all colors, per doz. bunch. | 4 0 | 8 0 |
| Lilium Harrisii, per dozen | 3 0 | 4 0 | — Parrot, bunch. | 0 6 | 0 8 |
| Lily of the Valley, dozen bunches | 6 0 | 12 0 | Tuberose, p. doz. | 0 8 | 0 9 |
| Maidenhair Fern, dozen bunches | 4 0 | 6 0 | | | |

VEGETABLES.—AVERAGE WHOLESALE PRICES.

| | s.d. | s.d. | | s.d. | s.d. |
|------------------------------|------|------|----------------------------------|------|---------|
| Artichokes, Globe, per dozen | 2 6 | 3 0 | Mushrooms, house, per lb. | 0 8 | 0 9 |
| Asparagus Sprue, bundle | 0 6 | — | Onions, new, green, doz. bunches | 2 0 | 2 6 |
| — English | 1 0 | 4 0 | — Egyptian, per bag | 10 0 | 10 6 |
| — Foreign | 1 0 | 2 0 | — picklers, per sieve | 4 0 | 5 0 |
| — various | 0 6 | 1 0 | Parsley, per doz. bunches | 4 0 | 5 0 |
| Beans, dwl., house, per lb. | 0 10 | — | — sieve | 2 0 | 2 6 |
| — Channel Islands | 0 10 | — | Peas to flats | 4 0 | 5 0 |
| Beetroot, per bushel | 3 0 | 3 6 | — Jersey, per lb. | 0 8 | 0 9 |
| Cabbage, p. tally | 2 0 | 4 0 | Potatoes, per ton | 60 0 | 90 0 |
| Carrots, per doz. bunches | 4 6 | — | — new, per cwt. | 8 0 | 9 0 |
| — New, French, per bunch | 0 9 | 1 0 | — Frame, lb. | 0 2 | 0 2 1/2 |
| Broccoli, per dozen | 1 0 | 2 6 | — new Teneriffe, per cwt. | 8 0 | 9 0 |
| — Tally | 5 0 | 8 0 | — Jersey Kidneys, per cwt. | 10 0 | — |
| Celery, per dozen bundles | 10 0 | 12 0 | Radishes, p. doz. bunches | 0 3 | 1 0 |
| Colewort, bushel | 0 6 | 1 0 | Rhubarb, Yorks, per dozen | 1 6 | — |
| Cress, per dozen punnets | 1 3 | — | — outdoor, per dozen | 1 6 | 2 0 |
| Cucumbers, doz. | 2 0 | 3 0 | Salad, small, punnets, per doz. | 1 3 | — |
| Endive, new | 0 8 | 1 6 | Shallots, per lb. | 0 2 | — |
| French, doz. | 0 3 | — | Spinach, English, bushel | 1 0 | 1 6 |
| Garlic, per lb. | 0 3 | — | Tomatoes, Canary, boxes | 2 0 | 3 0 |
| Horseradish, foreign, bunch | 1 3 | 1 6 | — English, per lb. | 0 6 | 0 6 1/2 |
| Leeks, 12 bunches | 2 0 | 2 6 | — Channel Isld. | 0 5 | 0 6 |
| Lettuces, Cos, per dozen | 2 6 | 3 6 | Turnips, new, French, per doz. | 2 0 | 4 0 |
| — Cabbage, per dozen | 0 6 | 1 0 | Watercress, per doz. bunches | 0 1 | 6 0 |
| Marrows, Vegetable, dozen | 8 0 | — | | | |
| Mint, new, per bunch | 0 2 | 0 3 | | | |

PLANTS IN POTS, &c.—AVERAGE WHOLESALE PRICES.

| | s.d. | s.d. | | s.d. | s.d. |
|------------------------------|------|------|--|------|------|
| Adiantums, per dozen | 5 0 | 7 0 | Herbaceous and perennial plants in var., per box | 1 0 | 1 6 |
| Arbor Vitæ, per dozen | 6 0 | 36 0 | Hydrangeas, per dozen | 9 0 | 24 0 |
| Aspidistras, per dozen | 18 0 | 36 0 | Ivy Pelargoniums, per dozen | 6 0 | 8 0 |
| Azaleas, per doz. | 18 0 | 30 0 | Lilium Harrisii, per dozen | 10 0 | 12 0 |
| Calceolarias, per dozen | 4 0 | 6 0 | Lobelias, per box | 1 0 | 1 6 |
| Cannas, per doz. | 18 0 | — | Marguerites, p. doz. | 6 0 | 30 0 |
| Cinerarias, per dozen | 4 0 | 6 0 | Mignonette, per dozen | 4 0 | 6 0 |
| Clematis, per doz. | 12 0 | — | Musk, per dozen | 3 0 | 4 0 |
| Crotons, per doz. | 18 0 | 30 0 | Palms, var., each | 1 0 | 20 0 |
| Dracenas, var., per dozen | 12 0 | 30 0 | Pansies, per box | 1 6 | 2 0 |
| Ericas, var., per dozen | 12 0 | 30 0 | Pelargoniums, scarlet | 4 0 | 8 0 |
| Euonymus, vars., per dozen | 6 0 | 18 0 | — pink | 4 0 | 8 0 |
| Evergreens, vars., per dozen | 4 0 | 18 0 | — white | 4 0 | 8 0 |
| Ferns in variety, per dozen | 4 0 | 18 0 | Rhodanthe, per dozen | 4 0 | 6 0 |
| Fuchsias, per doz. | 4 0 | 8 0 | Roses, various, doz. | 9 0 | 24 0 |
| Gladiolus Brechtii, p. doz. | 12 0 | — | Spiræas, per doz. | 5 0 | 6 0 |
| Heliotrope, per dozen | 6 0 | 8 0 | Stocks, per dozen | 4 0 | 6 0 |
| | | | Sweet Briars, per dozen | 3 0 | 4 0 |
| | | | Tomato plants, p. doz. | 1 0 | 1 6 |

REMARKS. Mangos per dozen, 4s. to 6s.; Tasmanian Pars, per case, 9s. to 14s.; Spring Spinach is now coming; some foreign Peas, in bags of 10 lbs. at 6s.; Lettuce, Cabbage, and other vegetables coming on fast.

POTATOS.

Dunbar Main Crop, 55s. to 90s.; Up-to-Date, 80s. to 85s.; and other varieties, 65s. to 68s. John Bath, 32 & 34, Wellington Street, Covent Garden.

SEEDS.

LONDON: May 27.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., describe to-day's Seed Market as ill-attended and uninteresting. Just at present there are neither speculative wants nor speculative inquiries to be

satisfied. Meantime a few transactions are reported in Chilian Red Clover-seed. More money is asked for French Trifolium for delivery in July. As regards Mustard and Rape-seed, no quotable variation is shown. Canary-seed, on the strength of small and diminishing stocks, and unfavourable crop prospects, is quietly hardening in value. Peas and Haricots are held for full prices.

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending May 24, 1902, and for the corresponding period of 1911, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

| Description. | 1901. | 1902. | Difference. |
|---------------|-------|-------|-------------|
| | s. d. | s. d. | s. d. |
| Wheat | 27 7 | 31 6 | + 3 11 |
| Barley | 24 1 | 25 4 | + 1 3 |
| Oats | 19 8 | 22 6 | + 2 10 |

ANSWERS TO CORRESPONDENTS.

*** EDITOR AND PUBLISHER.—Our correspondents would obviate delay in obtaining answers to their communications, and save 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.

CORRECTION. May I as a fastidious Miltonian correct a slip in the opening quotation of my last week's paper. For "Nature born, poured forth" read "Nature boon, poured forth." *Corycius senex*.

CUCUMBER: W. E. B. Due to the sudden cooling of the hot-bed, to eelworm, or to a sodden state of the soil, and which it is of these you should be the better judge.

DRACENA LEAF DISFIGURED: R. D. The leaf-bleaching is caused by a fungus called *Sphaeropsis Dracænarum*. Remove and burn all leaves that are attacked, and spray with dilute permanganate of potash solution to save remainder of foliage.

HOLLY-TREES: Omega. Holly-trees lose their leaves from attacks of the Holly-fly; sometimes from exposure to hot sun in the south in some summers experienced in this country, but this is of rare occurrence. On the Continent, Hollies in the warmer south and central countries must be planted in the shade, otherwise the leaves drop in the summer season. A Holly flowers well if the wood is well matured, and fruits, too, if the flowers are not injured by frosts, which must be severe to do that.

HOW TO BECOME FELLOW OF THE ROYAL HORTICULTURAL SOCIETY: T. L. A letter addressed to the Secretary, 117, Victoria Street, Westminster, would elicit the desired information.

INSECTS DESTROYING SHOOTS OF GRAPE-VINE: J. H. M. *Athous hæmorrhoidalis* is the name of the insect sent. It is a fairly common species, often found in decayed wood, and belongs to the wireworm family of beetles. Hitherto, so far as we are aware, it has not been known to injure Vines. The better course would be to shake the Vines over a sheet, and destroy any beetles that may be taken. If they do not readily fall in the daytime, try the method at night after dark.

NAMES OF PLANTS: W. E. B. *Prunus Padus*, and *Dendrobium suavisimum*.—H. F. 1, *Cyperus longus*; 2, *Gesnera elongata*; 3, *Antiericum lineare variegatum*; 4, *Aubrietia deltoidea*; 5, *Phlox frondosa*; 6, *Stenotaphrum americanum variegatum*.—*Veritas*. *Odonoglossum cordatum*.—*Bob*. *Piptanthus*

nepalensis, called evergreen Laburnum.—W. T. 1, *Geranium phœum*, hybrid *Geum*; 2, *G. pratense*.—*Land*. 6, *Ruthia tinctorum*; 7, *Cerinth major*; 8, not recognised; 9, *Ceterach officinarum*; 10, *Cneorum tricocum*.—C. L. *Prunus Padus*.—W. G. 1, *Retinospora*; 2, *Juniperus sinensis*; 3, *Euonymus europæus*; 4, *Crataegus coccinea*; 5, *Tropeolum pentaphyllum*; 6, *Abies Pinsapo*; 7, *Thuyopsis dolabrata*.

NARCISSUS: F. T. The Narcissus buds going blind is a common occurrence this year. The cold winds and frosts after the spikes were up may account for it.

PEACH FRUITS DISEASED: J. McDonald. The fruits are attacked by mildew, and you must remove all the affected fruits and burn them forthwith, afterwards dusting flowers-of-sulphur over the entire surface of the tree whilst the foliage and fruits are damp.

PRUNING YOUNG OAKS: Omega. Merely thin out the weak growth, and cut off the tips of the longer shoots at planting time or in the spring, reserving hard cutting back (once) till the following winter. Other trees in like manner.

THE XL-ALL, AND MUSCAT OF ALEXANDRIA AND LADY DOWNES GRAPES: E. W. W. If the maker states on the label sent with the compound that it should not be used on these varieties, why endeavour to obtain any opinion from us? No complaints about the ill effects that have followed its use on any kind of Vine has reached us, for the reason probably, that the users have paid due heed to the advice of the maker not to use it on these two varieties of the Vine.

VINE LEAVES DISCOLOURED: F. G. B. The appearance of the leaves sent point either to drip of water at a very low temperature, or to scalding from bursts of sunshine striking the leaves when covered with globules of water.

VINE LEAVES, FRENCH BEANS, STRAWBERRIES, &c. Kill. The vinery is kept too moist, or what is the same thing, you do not ventilate sufficiently. The Bean leaves are covered with the remains of the white fly, that often attack these plants; you should fumigate with tobacco, or some of its preparations occasionally, or employ weak tobacco or Quassia water. The Strawberries have been, in the case of the green ones, gnawed by weevils or slugs. Catching them is the obvious remedy. The ripe fruits were covered with a mould (*Monilia*), which may be a cause or a consequence of decay. The *Hippeastrum* leaves indicate the presence of the bulb mite. The better means of getting over an attack is to afford high cultivation. The zonal *Pelargonium* leaves have arrived at maturity, and may have fallen naturally; or being beneath other leaves, have fallen prematurely from lack of light and of nutriment. The spots on them are due to the punctures of aphids or other insects, and some kind of fungus has seized upon the dead tissue surrounding the punctures; that is all. Leaves in which decay is observed should not be left on a plant till quite decayed.

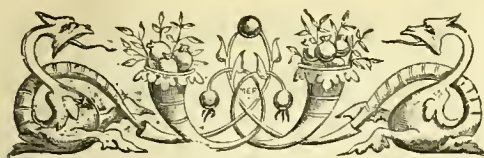
WHY GRASS DOES NOT GROW STRONGLY UNDER BUSH TREES. Omega. From lack of light when it is most wanted, which weakens the grasses, if it do not actually kill. Drip is another cause of most kinds of plants, grasses included, not succeeding.

*** In consequence of the great pressure on our space, many answers to enquiries are held over.

COMMUNICATIONS RECEIVED.—J. R.—A. P., with many thanks.—J. Burtt Davy, California.—R. H. P.—J. R. J. Rev. E. H. Thompson, Tasmania.—T. W. F., not possible this week, best thanks.—Leonard Barron, New York.—J. R. J.—L. F., Glasnevin, many thanks.—S. A.—W. W.—J. A.—Pennick & Co.—W. G. G.—Sir N. F.—H. Rogers—W. H. B.—H. H. A. C.—R. N.—N. E. B.—Bob—Mrs. Gertrude—W. A. R.—C. B. P.—R. W. R.—H. F.—F. W. B.—P. T.—Walton E.—Clibran & Co.—G. D.—Foreman—J. G.—F. U. & Co.—C. S.—A. R.—A. R.—Winton—W. G. G.—J. P.—C. B.—R. N. D.—A. R.—E. H. J.—Miss Edge—D. B.—J. K. J.—O. T.—C. T. D.—S. J. N.—T. Cripps & Son—S. A.—J. A.—A. H.—G. W.—R. D.—F. G.—B., Tyngsmead.



TREE PEONY IN THE GARDEN OF CAPTAIN HOLFORD, WESTONBIRT, GLOUCESTERSHIRE:
PHOTOGRAPHED BY E. T. LAMB, TETBURY.



THE

Gardeners' Chronicle

No. 806.—SATURDAY, JUNE 7, 1902.

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THE ART OF TABLE DECORATION.

By OWEN THOMAS, Head Gardener to the late QUEEN VICTORIA.

THIS is one of the most interesting of the many aspects which gardening presents for the enjoyment of its many votaries. It is a subject which may be enjoyed by all lovers of the garden, and it is a pleasure not denied to those who are unfortunate enough not to possess a garden at all. I am sorry to say that it must be admitted that these latter are very much in the majority, counting the teeming millions of our great cities and towns. Well is it for our people so situated, that the fairest flowers of the South of France, the Canary and the Channel Islands, and our home supply, are daily brought to their doors in immense quantities, and at a moderate price.

Of late years a change has come over the methods of decorating tables. In former days it used to be the custom to decorate the table more with handsome plate or ornaments of some description, and with abundance of fruit in rich variety, with only a sparing show of plants.

The fashion obtains now of arranging the greater portion of the gold and silver plate

and the fruit on the side tables, and of using those ornaments only on the table itself which lend themselves to the effective display of flowers, thus flowers being made the chief attraction. For my part, I must say that I favour the inclusion of fruit and of a considerable show of beautiful plate on the table, as a few flowers and these combined help very much the one to enhance the beauty of the other. There are very few articles of "virtu" in the way of gold and silver plate which may not be made to serve the purpose of holding a few choice flowers or sprays, and be thereby made the more beautiful. The great danger lies in using too many flowers, thus marring the elegant design, or hiding the beautiful tracery and workmanship of the vase or figure so decorated. Large and heavy flowers must not be used for this purpose, but a light tracery of Smilax, Asparagus, Ficus repens, or any such delicate trailing plants may be used with most pleasing effect in combination with such flowers as Odontoglossum crispum, O. Pescatorei, and O. vexillarium; and also the smaller Cattleyas, Tea Roses, Lily of the Valley, and any other choice flowers available, according to the season; but no ordinary, common, or heavy dumpy flowers should be used in association with those beautiful works of art.

I propose to divide the subject under the following heads:—Plants in flower best adapted for the work; foliage plants; varieties of cut flowers which are most effective; varieties of foliage plants best adapted for tracing, giving some examples of how best to arrange various sized tables.

PLANTS IN FLOWER.

Among these there is a wide choice. The Gloxinia, when well bloomed, is one of the most effective, especially the pink and red ones with erect flowers. The Cyclamen in various shades of colour is another. The Chinese Primula, when bold, well-flowered plants are available, especially the pink and deep scarlet varieties, are effective, as are also the stellata forms. Well-bloomed plants of Hybrid Perpetual Roses, in 5-inch pots, are delightful subjects for this purpose, and so are good pots of Lily of the Valley, and the pink and scarlet Carnations, especially the variety named Princess May. The Ghent, the mollis, and the Indian varieties of Azalea are charming for this purpose, and can be had in bloom from November to June. The Bouvardias, both the pink and scarlet varieties, and the white also, help to make a pretty and pleasing table. The Amaryllis, when well bloomed, is a bold, striking, and effective plant for this work, especially when the table is a large one; as also are well-flowered plants of Anthurium Scherzerianum. The Fuchsia, when well grown and flowered, lends itself well to this work; and the fancy and zonal Pelargoniums may occasionally be used, giving a bright and cheerful effect. Dielytra spectabilis, when forced, is one of the most charming of all plants for table decoration. Amongst Lilies, all the faintly perfumed varieties are available for this work, including all the lancifolium type; but the strongly scented varieties, such as those of the auratum and the longiflorum types, can only be used on rare occasions, where the rooms are large and the ventilation good—and even then it is safer not to use them, as some ladies

are ready to faint at the sight of them in a room. The same remark applies to all pungent and strong smelling flowers, as Gardenias, Tuberoses, Tabernæmontanas, and many others. Even the Stephanotis is objected to by many as being too highly perfumed for a room; the artist runs a risk of giving offence, and of incurring adverse criticism, even though his table in every other respect may be really beautiful. Therefore I would advise that extreme caution be used in introducing strong-smelling plants to the dining-table.

Among bulbs at different seasons of the year are to be found many of the most effective and beautiful subjects for this work, commencing with the Snowdrop, grown in shallow pans mossed over, transferred from these when in bloom, and placed on small gold or silver or glass plates, and disposed artistically on the table. The Crocus are treated in the same way, rendering an agreeable and pleasant service. The Hyacinth also, both the ordinary kinds and the Roman, may be used in pots, and when well grown and flowered make an effective arrangement; but too many of these must not be placed on the table, or the perfume in many cases will be objected to. Tulips in pots, especially the Darwin self-coloured ones, the old English types including the Parrot, are *par excellence* the most effective subjects to use for this work. Indeed, some of the most effective tables I have ever had the pleasure of ornamenting have been decorated by Tulips, especially the self-coloured ones. The flaked ones also are very beautiful for a change. Let me advise those who have much of this work to do, to put up a good stock and force them into flower as wanted, until they can be had in abundance out-of-doors in May; and in passing, may I say that these Tulips can be had in greater perfection as regards quality of bulbs in Ireland than in Holland, and at a little cost. Therefore, when ordering bulbs of Tulips, let English growers give a thought to our friends in Ireland, as without a doubt, the climate and soil of many parts of Ireland are as well suited to the propagation and growth of most of our hardy bulbs, as are those of Holland; and all that is needed to make a great commercial success of this aspect of horticulture in Ireland is the encouragement of the many in England who use these in such vast quantities, the supply of which in the past has been vested almost solely in the hands of the Dutch.

The Narcissus in endless variety furnish one of the best subjects possible for this work, and may be had in flower in pots from Christmas to April, and afterwards out-of-doors for a long time. The Ericas also provide useful material in the way of change, especially the varieties ventricosa and Cavendishi.

There are no flowering plants so effective in the art of table decoration as are some of our popular and easily-grown Orchids; and amongst these the most popular are the various sections of Cattleya and Lælia. These always give a rich and pleasing effect, and never fail to give pleasure. The same with Odontoglossum crispum (Alexandra), and Pescatorei. What exquisitely lovely tables can be produced by well-grown and well-flowered plants of these! as can also be produced by the use of that popular and usually easily grown Orchid

Odontoglossum vexillarium (or, as it is now called, *Miltonia vexillaria*). At Chatsworth this used to grow as freely as a weed, and some of the loveliest tables I have ever seen were furnished with this flower—a perfect dream in rose and pink.

The *Pleiones* again, what delicious plants for table work when well flowered, the species of *lagenaria* and *maculata* especially! These are gems of the first water for table work. They are best grown in shallow pans in wood moss and a little peat, and when in bloom are easily transferred into plates of gold, silver, or glass, and so laid on the table in any posi-

rator can call to his aid. Indeed, the *Dendrobium* genus is highly distinguished among the Orchid family for its brilliancy and beauty; but amongst them all none can excel the two popular and easily-grown species mentioned above.

In the genus *Oncidium* are many species of great value to the decorator. The tall, spreading, golden butterfly-like flower-scapes of the following produce such a light and graceful effect as is difficult to excel by any other flower:—*O. ampliatum*, *Rogersii*, *Cavendishianum*, *Marshallianum*, and the finest of all the *Oncidiums*, *macranthum*, with a flower-scape often from 6 to

NEW OR NOTEWORTHY PLANTS.

PLATYCLINIS BARBIFRONS.*

The plant bears a close resemblance to the well-known Gold-chain Orchid *Platyclinis filiformis*, from which it differs in the whitish-green colour of the flower, and the peculiar character of the lip. It is, if not a beautiful, surely a graceful plant, and gives a good effect by contrast, if cultivated together with its lovely sister plant. Further, the plant is highly interesting in other respects. The lip is bordered in its anterior parts from the middle to the top by a dense mass of filiform warts, a character not described, and as 'I

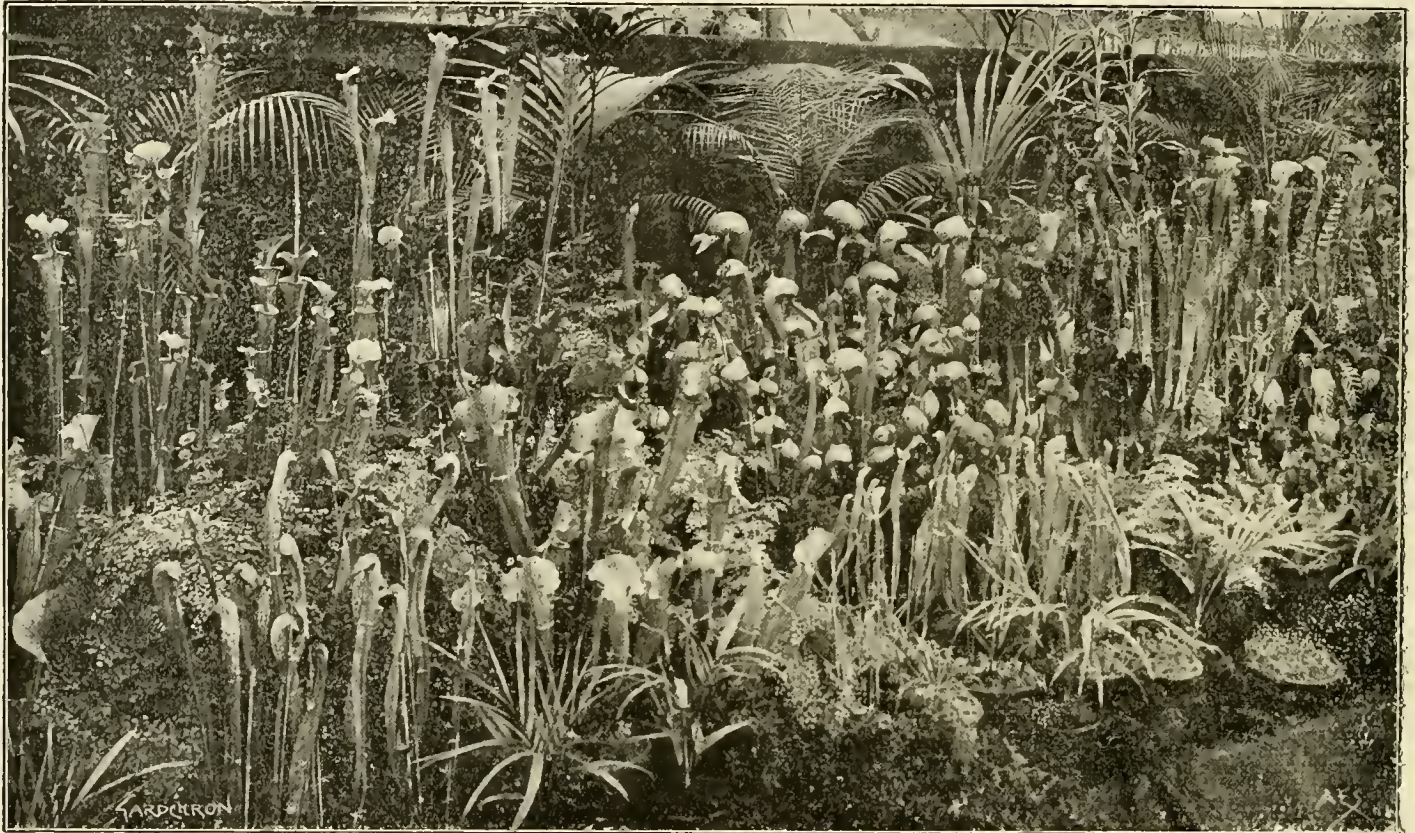


FIG. 126.—A GROUP OF SARRACENIAS SHOWN BY MR. A. J. A. BRUCE, NURSERYMAN, CHORLTON-CUM-HARDY, MANCHESTER.

(See Report of Temple Show in the issue of the *Gardeners Chronicle*, May 31; and p. 371, present issue.)

tion desired—for rarity and loveliness of effect these are unsurpassed.

The *Masdevallia* is another Orchid which gives a rich and striking effect, especially those of the *Harryana* types, with their wonderfully rich and brilliant colourings; and even the white variety, *tovarensis*, grown on the same system as recommended for the *Pleione*, and placed in shallow vessels on the table, is exceedingly pretty and effective. Of *Epidendrum vitellinum* it may be said that for vivid and pretty colouring, few subjects are capable of producing a brighter or more pleasing effect than this. *Dendrobium Wardianum* in its many beautiful forms need only be mentioned in association with this subject to conjure up visions of rare loveliness. *D. nobile*, also, in its many varieties and forms, is one of the most effective subjects the table deco-

10 feet in length, studded its whole length with flowers of the colour of old-gold, and the richest shade of brown, when festooned over gold or silver centre-pieces or candleabras, never fails to produce an enchanting and beautiful effect. Amongst the *Vandas* few species flower freely enough on small plants to be of help in this way; but *Vanda teres* is an exception, and when four or five well-flowered stems are grouped together and placed in low gold or silver bowls, I think I am safe in saying that no flower grown can give a richer or a more glorious effect. Many other genera and species of Orchids might be mentioned, amongst them the *Cypripedes*, as being the most effective flowers it is possible to use for table decoration; but in those mentioned above are included the best, most beautiful, and easiest to grow. *Owen Thomas*.

(To be continued.)

believe, not observed in other species; the side-lobes are completely absent. By this characteristic a good observer will with the naked eye distinguish this plant from any other *Platyclinis*. The habitat is Sumatra, and it is the first member of this genus known from such a western position as this island, all the other species being natives of the Philip-

* *Platyclinis barbifrons*, Krnzl.—Caulibus ascendens, radicans; bulbis 4-5 cm. inter se distantibus; elongato-ovoideis teretibus 4-5 cm. longis, basi 1 cm. crassis; foliis brevi-petiolatis lanceolatis acutis late viridibus 12-18 cm. longis 2-2.5 cm. latis; racemo tenuissimo pendulo multifloro; seapo et rhachi filiformibus; bracteis ovatis ovaria bene excedentibus; sepalis petalisque conformibus ovato-lanceolatis acuminatis, labello integro obovato apiculato, lamella biloba transversa in ipsa basi, callis brevibus minutis fere semicircularibus in tertia parte superiore dissecto disco et margine antice dense papilloso (inde nomen), androcinii marginis postico; pice tridentato, brachiis gynostemii subulatis in tertia parte superiore gynostemii.

Flores albo-virides 4 mm. diametro, labellum antice 2 mm. latum.—Sumatra, Floret, in Europa, Aprilis.

pinus or the eastern parts of the Indian Archipelago. The plant flowered for the first time in April of this year in the collection of Baron Maximilian von Fuerstenberg, at Hagenpoet near Düsseldorf, who purchased this plant, with many others, from a gentleman who had some years ago rather frequent communication with Sumatra. From this latter gentleman I received at that time flowers to name, and by correspondence with him I learned that he had his plants only from Sumatra and from no other part of India. Some months later he gave up Orchids and sold his collection, the greater and the better part of which became the property of Baron von Fuerstenberg. *F. Kränzlin, Berlin.*

the best type of *O. crispum*; and other showy *Odontoglossums* give equally good results of the leaf-soil culture, every plant being in a superb condition, and many of them furnished with fine flower-spikes. As Mr. Gleeson succeeds so well in cultivating Orchids in leaf-soil, there is no reason why others should not do likewise. Care in applying water seems to be the most important factor.

DENDROBIUM BOXALLI.

This very pretty and distinct *Dendrobium*, which was discovered by Boxall in Burmah, and sent to Messrs. Hugh Low & Co. in 1873, has never been plentiful in gardens, a plant or two only appearing from time to time among

Sharp conveys the information that the plant was one of three very small pieces purchased from the Liverpool Horticultural Company for a few shillings seven or eight years ago. It is very much to his credit that he has succeeded in growing them into such magnificent plants.

THE MUNICIPAL GARDENS, CAPE TOWN.

THESE excellent gardens originated at the suggestion of several persons as "botanic gardens" in 1848; a sum of £850 was privately subscribed, and the Government of the day added £300. They were designed to advance botany and horticulture. A local nurseryman, Mr. Draper, was the first superintendent, and planted many of the existing trees; he was obliged to sell seeds, bulbs, &c., to meet the necessary expenses (just as is done to-day to support other colonial gardens).

Some of the oldest trees were planted by the Dutch, others were purchased from the executors of Baron von Ludwig. Karl Zeyher, a well-known botanist, labelled the plants, and added collections obtained by himself from the veldt.

Jas. McGibbon, from the gardens of the Duke of Sutherland, Elgin, was a subsequent superintendent; he retired in 1881, after a very successful management. It was in his time that numerous Australian trees and shrubs were added.

The two largest Gum-trees—the first to be planted in S. Africa—are there, being upwards of 20 feet in circumference. Prof. MacOwan, the present Government botanist, was the last superintendent as long as they were "botanic" gardens; but in 1891 they became municipal gardens, free to all visitors.

The garden comprises 14 acres, and is of an oblong form, bounded on one side by iron railing, separating it from the famous Oak Avenue. Altogether there are some 8,000 different kinds of trees, shrubs, and herbs, while a considerable number of Orchids, Ferns, and tropical plants are under glass. In front of the Public Library, at one end of the garden, is a statue of Sir G. Grey, Governor from 1851 to 1861.

The trees and shrubs have been collected from the warmer temperate regions of both hemispheres. There is a straight walk down the middle, and serpentine ones at the sides, with transverse connections. A good deal is laid down in grass of a native species; it has long, creeping shoots, producing a sort of felt by interlacing, giving a peculiar elastic nature to it as it yields to the pressure of the foot.

The following are a few of the more conspicuous trees and shrubs, which will give some idea of their variety and profusion. First of all, handsome and tall Norfolk Pines and *Araucaria excelsa* abound, as well as *Araucaria brasiliensis*; several kinds of Palms and two or three species of Cycads occur. An enormous plant of *Strelitzia regina*, about 15 feet in height and diameter, with a profusion of flowers, forms a conspicuous object. The native Yellow-wood (*Podocarpus*), *Magnolia grandiflora*, a large round tree, some 40 feet high and through, covered with flowers; *Grevillea robusta*, at least 20 feet in height; and several kinds of Figs, as *Ficus religiosa* and *F. elastica*, each 30 feet, are conspicuous objects. Oleanders, as in all gardens, abound, with white, pink, single and double flowers. Large clumps of Bamboos and Pampas-Grass, &c., are situated at intervals on the lawns.

Rockeries have a good selection of South African bulbous and succulent plants, as



FIG. 127.—VIEW IN THE MUNICIPAL GARDENS, CAPE TOWN.

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT THE WARREN HOUSE, STANMORE.

IN the season of the autumn-blooming *Cattleya labiata* we inspected and made some remarks on the fine condition of some Orchids which Mr. M. Gleeson cultivates in leaf-soil, the extraordinary vigour of the plants, and profusion and excellence of the flowers, and the promise of an equally fine display in the summer-flowering varieties. The *Cattleya Mossiae*, *C. Mendeli*, *Laelia purpurata*, and other early summer-flowering kinds are now in bloom, and have well carried out the promise of a magnificent display. An excellent strain of *C. Mossiae* and *C. Mendeli* was obtained, and the flowers, fine in every case, show interesting variation, the larger plants bearing from six to twelve blooms each; and in the case of one charming specimen of *C. Mossiae*, twenty-seven flowers. The plants of *Laelia purpurata* are equally good, the variation in colour ranging from the nearly white *L. p. Schroderi* to the dark purple-tinted *L. p. Brysiana*. The new *Odontoglossum*-house which H. L. Bischoffsheim, Esq., has had built, is filled at the present time with very fine plants of

other *Dendrobiums* from Barmah. Its scarcity has been attributed to its being of hybrid origin, and not plentiful in its own country. The pseudo-bulbs are comparatively short and thick, especially at the nodes. The flowers are borne as is usual in the "fasciculata" section of *Dendrobium*; they have somewhat the general appearance of those of *D. crassinode*, being white, finely tipped with purplish-rose, the lip having a dark yellow disc. It is flowering in the garden of Mrs. Brightwen, The Grove, Stanmore (gr., Mr. J. W. Odell).

MILTONIA VEXILLARIA "FREELAND VARIETY."

At the show of the Royal Caledonian Horticultural Society at Edinburgh, May 7 and 8, Orchids were not a strong point; but in the class for four in which Mr. Sharp, gr. to C. L. Wood, Esq., Freeland, Forquandenny, secured the 1st prize, and in his collection was a noble plant of this fine variety of *Miltonia vexillaria*, with five spikes of extraordinary large and richly-coloured flowers. The variety is the best of that class represented by M. v. "Empress Victoria Augusta," shown in 1895 at the Temple Show, but this one has flowers fully one-third larger, and of an almost uniform dark magenta-rose tint. A correspondent kindly sends one of the flower-spikes, and Mr.

Hæmanthus, Iridaceous genera, &c., Aloes, Mesembryanthemums, Euphorbias, Cotyledons, and Crassulas; as well as Mexican Cactaceous plants (see fig. 127).

The native shrub, *Lobelia myrtifolia*, forms handsome bushes; a *Colletia spinosa* is about 20 feet in height, as also a *Salisburia adiantifolia*, or "Ginkgo" tree. Several species of Pine, as *P. longifolia*, *P. pinea*, and *P. pinaster*, occur; the last two form large woods on the slopes of Table Mountain and elsewhere—they seed profusely.

A *Gardenia*, with small, lemon-shaped fruit, is a handsome tree, about 20 feet in height. *Juniperus virginiana*, 40 by 20 feet. *Proteaceæ* are not largely represented, but many Australian *Myrtaceæ*, as *Callistemon* ("bottle-brushes"), and others abound.

Carissa grandiflora, a native of the eastern parts of South Africa and Natal, is a large bush or tree, with sweet, Jessamine-like flowers, with five to eight lobes to the corolla, more than an inch across. The fruit is Plum-like, and said to be delicious, though it belongs to the "suspicious" order *Apocynaceæ*; it bears forked spines.

The above are only a few of the more prominent shrubs and trees. The herbaceous borders are not in season, but such as stand the drought are bright with the same kind of flowers as we grow in England. A Rose garden is at the end, but one must wait for the wet winter of June and July to see these in perfection. Well clipped hedges of European Myrtle form boundaries, closely resembling Privet hedges, but betraying their nature by their flowers. Hedges are elsewhere formed of *Plumbago*, trimmed or growing freely; others are formed by a species of Australian *Hakea*, a spiny shrub, with pectinate leaves, called *Aberia* or *Dovyalis* (*Bixaceæ*), and the Pomegranate, often having the common Passion-flower covering many yards; while *Bougainvilleas* cover the walls of houses, &c.

Of herbaceous plants, among the most successful are Cannas, which grow and flower to perfection; of course the native *Agapanthus umbellatus*, blue and white, are everywhere; large bushes of *Hydrangeas* of the deepest blue, some 15 feet through, may be seen. *Justicias*, *Tecomas*, *Cordylines*, *Daturas*, *Camellias*, now in fruit with broad leaves, *Doryanthes*, and *Moræas*, but most of the Cape *Monocotyledons* are not now in season.

In the two illustrations, one (fig. 127) shows a fine *Cereus peruvianus*, and a tall *Thuja orientalis* behind it, in the distance; *Encephalartos Altensteinii* in front, and a tree with a seat under it, labelled *Angophora lanceolata*, as well as a branching tree of *Aloe Bainii* on the right.

In the other illustration (fig. 129) Table Mountain is seen in the distance. There are two Norfolk Pines (*Araucaria excelsa*), and a collection of succulents by the side of the path. The little edging is made of a prickly Juniper. *George Henslow.*

[Mr. H. J. Chalwin, whose portrait we give, succeeded Prof. MacOwan when the gardens were taken over by the Municipality of Cape Town, and he is still the superintendent of the garden. Ed.]

PLANT PORTRAITS.

HIDALGOA WERCKLEI.—The so-called climbing Dahlia. See *Gardeners' Chronicle*, August 4, 1900, p. 83, fig. 22.

ROSE SOUVENIR DE PIERRE NOTTING.—A lovely sulphur-yellow Tea Rose, previously mentioned in the *Gardeners' Chronicle*, October 13, 1900, p. 271. *Revue de l'Horticulture Belge*, May 1.

RUELLIA LORENTZIANA.—A greenhouse Acanthad from Uruguay. Flowers trumpet-shaped, lilac; tube about 1 inch long, equalling the spreading limb. Cleistogamous, self-fertilising flowers are produced along with the ordinary flowers.

CULTURAL MEMORANDA.

DIELYTRA SPECTABILIS.

THIS is not only a charming border plant, but it is also an equally effective and valuable greenhouse subject when treated as a pot-plant, the gracefully drooping spikes of heart-shaped pink flowers contrasting most effectively with the delicate, Fern-like foliage. The plant may be propagated by division of the roots, and these should be planted in a situation sheltered from north and east winds, the process of transplanting being effected as soon after the plants have gone out of flower as possible, making the soil fairly firm about the roots in planting, afterwards applying water to settle the mould about them. Ordinary garden soil, light rather than heavy in texture,



MR. CHALWIN,
SUPERINTENDENT OF THE MUNICIPAL GARDENS,
CAPE TOWN.

and resting on a gravelly sub-soil, will suit the root requirements of this beautiful and well-known plant, which attains to a height of 2 feet. *H. W. Ward.*

HYBRID RHODODENDRONS.

THE race of "arboreum" Rhododendrons as distinguished from the other three sections of the genus, namely Indian Azaleas, Ghent and Mollis Azaleas, and the Malayan and Javanese species, originated in the earlier half of the last century, and was the outcome of inter-crossing *R. arboreum*, *R. catawbiense*, *R. caucasicum*, *R. ponticum*, and *R. campanulatum*. Their progeny have been crossed and re-crossed to such good purpose that we now possess hundreds of named sorts comprising many very magnificent hardy flowering shrubs. *R. arboreum* was introduced in 1818, when Dr. Wallich sent seeds of it from Nepal to the Botanic Gardens of Kew and Edinburgh. The first recorded hybrid from it was *R. altaclerense*, raised in the garden of Lord Carnarvon at Highclere, and figured in the *Botanical Magazine*, t. 3123 (1835). Its other parent was a form of *R. ponticum*. Similar crosses were made about the same time in other gardens, *R. Smithii*, *R. Russellianum*, *R. venustum* (*arboreum caucasicum*), and others being among the results.

Grand however as *R. arboreum* is in itself, and valuable as it has proved in the breeders' hands, there are also many other species among the Sikkim-Himalayan Rhododendrons that possess these good qualities, although as yet comparatively little has been done with

them. The late Mr. J. H. Mangles frequently called the attention of hybridists to them, and he himself in his garden at Haslemere made numerous crosses with Himalayan species of *Rhododendron*, the rich results of which are only now becoming known to us.

A species which by its exceptionally good qualities and well marked characteristics has been productive of numerous beautiful hybrids is the one known in gardens as *R. Aucklandii*, or as it should now be called *R. Griffithianum*. Introduced by Dr. Hooker from the Sikkim Himalaya, in 1840, it first flowered in a nursery at Wandsworth in May, 1858. What may be called a Chinese form of it, differing mainly in having usually six or seven flower-segments instead of five, was introduced in 1859 by Fortune, and named in compliment to him. These two plants, thanks to the efforts of Mangles, Luscombe, George Paul, Anderson Henry, and a few others, have been the means of adding to our gardens a race of Rhododendrons possessed of all the attributes of first-rate hardy flowering shrubs.

The first Aucklandii hybrid of which there is any record was raised in the gardens of the Lawson Company at Edinburgh, in or about the year 1869, when Mr. Scott crossed *R. Griffithianum* and a red-flowered garden variety known as John Waterer, supposed to be from *arboreum* × *catawbiense*. In 1879, these Griffithianum crosses were seen by Mr. Mangles, and described in the *Gardeners' Chronicle* in July of that year. They are still in cultivation in Scottish gardens, and I am told that they so closely resemble the hybrid *R. Kewense* (*Griffithianum* × *Hookeri*) that they might easily pass for that plant. In April, 1882, Mr. Mangles exhibited his hybrid Alice Mangles, which he had raised from *R. ponticum* crossed with *R. Griffithii*, and which had flowers 4 inches across, whitish-lilac in colour and very fragrant.

The next of which we have any record is *R. Manglesii* ×, raised by Messrs. Veitch from *R. Griffithii* and a white-flowered garden variety known as *album elegans*. This is a beautiful hybrid of excellent habit, very floriferous, the flowers in erect racemes, their colour bluish-pink in bud, pure ivory-white when expanded, with crimson spots on the top petal. A figure of it was published in the *Gardeners' Chronicle*, Jan. 11, 1885, p. 49.

R. kewense × was raised at Kew from *R. Griffithianum* and *R. Hookeri*, and first flowered in May, 1888. It forms a wide-spreading, flat-topped bush, and bears large erect racemes of flowers, each 4 inches across and varying in colour in different plants, from white to deep rosy-pink. It is quite hardy at Kew, where it makes a grand display in May in the Rhododendron dell.

Two years ago I had the pleasure of visiting the garden of Mr. H. A. Mangles at Littleworth, Tongham, Surrey, where there is an exceptionally rich collection of Rhododendrons, among them being many of the hybrids raised by his brother, the late Mr. H. J. Mangles, of Haslemere. There are many beautiful Griffithii crosses among them, and it is to be hoped that they may be multiplied and distributed. The finest of these hybrids, however, is still in the garden of Mrs. H. J. Mangles, at Valewood, Haslemere, where it is represented by an enormous, well-furnished bush about 12 feet high, which, when I saw it in May two years ago, was truly magnificent, almost every branch bearing a large, well set-up head, racemose, as all the Griffithii hybrids are, the flowers well-formed, and their colour a beautiful soft pink. It is named Isabella Mangles. Another of the Mangles hybrids with flowers almost crimson, is called

Liza Stillman. All these hybrids are perfectly hardy in the south and west of England.

But by far the most beautiful of all the Griffithii hybrids yet raised has lately flowered in the Tremough (Mr. H. Shilson's) garden, near Falmouth, whose gardener, Mr. R. Gill, raised, by crossing some ten years ago R. Griffithii with R. Thomsoni. I had previously seen crosses between these two, and have lately received one from Mr. Whitton, Superintendent of the Parks and Gardens of Glasgow. There are several forms of both R. Griffithii and R. Thomsoni in cultivation, some much better than others, consequently crosses from them may show considerable variety, especially in colour. I have specimens of one with uniformly crimson flowers. But the Tremough seedling is a wonder of beauty. It was staged at the last

sorts. These plants are now in flower, and are well worth inspection.

There are many earnest workers busy breeding new Orchids, new Roses, new Primulas, &c.; but, so far as I know, only a few have as yet turned their attention to the really rich Rhododendron-material that is only waiting to be intelligently operated upon to yield results at least as valuable as any that have yet been obtained by the plant-breeder. W. Watson, Kew.

VEGETABLES.

POTATO "MAY QUEEN."

I FIRST grew this recent introduction of Messrs. Sutton & Sons in 1901, but was not much impressed with its value in the open,

and 14 inches apart, are copiously afforded water the day before the seed is sown.

There are several good varieties fit for winter, viz., Red Globe, a capital variety, and White Stone; and the plants, when large enough, are thinned to 4 inches apart, and the soil is frequently stirred with the Dutch-hoe. When the bulbs are of the size of a cricket-ball they are pulled, a few of the outer leaves removed, and buried 3 inches underground. It is necessary to go over the beds repeatedly, and as fast as the Turnips become large enough, to take them up, and thus afford the smaller ones more space in which to grow.

Should severe frosts set in, spread some litter over the ground. Any out-of-the-way spot may be utilised for wintering Turnips, Beet, Carrots, &c., in the above-mentioned manner. H. Markham, Wrotham Park.

THE LAWN-MOWER :

ITS CONSTRUCTION AND MANAGEMENT.

(Concluded from p. 359.)

MAINTAINING MACHINES IN ORDER.—It is often the case that a lawn-mower is much neglected as to cleaning and oiling, but there is no machine in existence that so well repays the trouble taken to keep it in good condition as does a lawn-mower.

In the first place, the machine should be kept perfectly clean, and no dirt or grit should be allowed to accumulate on the cog-wheels or other driving-gear. A short brush, like a small spoke-brush, is the best thing to use for this purpose, taking care not to brush any grit into the bearings. The machine should on no account be used with the bearings loose or worn. If prompt attention be paid to the tightening of them at the first sign of looseness, a great deal of unnecessary wear and much noise will be prevented. Particularly is this the case with the bearings of the cutter-spindle, which require careful watching, as here the greater part of the wear takes place. If it is a cog-wheel-driven mower, the gear should be examined to see that the wheels are not getting out of line with each other, and if they are, it should be promptly corrected by moving the bearings as required. They are usually fitted with a slight freedom of movement (in the same way as the chain-driven mowers—see *ante*, fig. 115) for this purpose. In a chain-driven mower the chain should not be kept too tight, nor should it be used with the chain so loose as to fly off. A little care spent on this will make a wonderful difference to the running of the machine. All nuts and screws should be looked to, both on the score of safety and noise, for anything shaky or loose will be aggravated tenfold by neglect, and a noisy lawn-mower is an intolerable nuisance. Every oil hole should receive attention; the machine should never be used without oiling, and here, as in all machinery, the rule of a little and often is better than a great deal only now and then. With a few drops frequently given, the machine does not get into the disgusting mess from which it has been the writer's experience to disinter a great many mowers.

As to sharpening, it may be at once stated that where an engineering establishment is situated at a convenient distance it does not pay the gardener to undertake this operation, which is dirty, tedious, and requires care. In those cases, however, where the gardener elects to do it himself, the mode of procedure should be this: the machine should be placed on a bench, with the cutter toward the operator, and securely fixed to the wall, so that the cutter is free to revolve. On examining the machine there



FIG. 129.—A COLLECTION OF SUCCULENTS IN THE MUNICIPAL GARDENS, CAVE TOWN. (SEE P. 367.)

Truro show, and was awarded a First-class Certificate by the delegates of the Royal Horticultural Society, who named it Beauty of Tremough. The flowers of this are longer than those of R. kewense; otherwise they are not unlike them, except in the beautiful blending of crimson, pink, and white, of the pedicels and corolla. I have never seen a more beautiful flower. I also have a specimen of a hybrid between R. Griffithii and R. arboreum, received from Mr. Carlyon of Tregrehan in April, 1897. In this the flower-buds are deep crimson, and when fully expanded they are rosy-red, with blotches of deep crimson at the base of the tube. I know nothing of the history of this plant.

Mention has already been made of the Fortunei hybrids, some of the best of which were raised by Mr. Luscombe, and which are represented by large bushes in the Rhododendron dell at Kew, where also may be seen a good number of the hybrids more recently raised by Mr. George Paul from R. Fortunei, and some of the best of the popular garden

and probably should not have given it further trial had I not subsequently noticed in Messrs. Sutton's seed catalogue that they recommended it for frame culture. I therefore gave the variety a trial in frames, and early last month (May) lifted the tubers. I was agreeably surprised at the crop, and also by the quality when cooked, which was excellent. The tubers were clean, large in size, with scarcely any small ones. It is a kidney Potato, with a dwarf top. I have generally relied on Ringleader, Ashleaf Improved, and Early Laxton for frame work, and also for first crop outside; but this variety will probably take the place of some of these. T. H. Slade, Pollimore Park Gardens, Exeter.

TURNIPS.

It is my usual practice to make two large sowings in the month of July, for storing, choosing an open position, and making the soil moderately firm, or choosing that which has not been dug lately. If the weather is dry, the drills, which should be 3 inches deep

will be noticed a hole in one of the wheels into which an iron handle fits, usually supplied with the machine. Where this is not the case, as in some old machines, a hole should be drilled in one of the large wheels, the one outside the frame, and a piece of iron screwed in to form a handle. The machine should then be turned steadily the opposite way from which it runs when at work, and the cutter lightly sprinkled with oil and fine emery—"super-grinding" quality will usually be the most suitable, as coarse emery will cut the blades of the cutter too much. This should be continued until the blades will cut a piece of note-paper cleanly and without tearing, when the cutter and bearings should be carefully wiped clean with a rag moistened with paraffin, and a few drops applied to the bearings to work out any emery that may have lodged therein. If the machine is one of Messrs. Barnard & Co.'s make, i.e., with smooth wheels, the intermediate wheel, *c* (fig. 106, p. 320, *ante*), should be removed temporarily, and a leather strap passed round the wheel *b* on the cutter-spindle and the large wheel *a*, into one of the spokes of which a handle must be fitted, similar to the former arrangement. As to the "side-wheel" arrangement, one of the side-wheels will generally be found to have a hole fitting a handle supplied with the machine (if not, it must be so fitted). This wheel must first be removed, and also the pinion *d* on that side (see figs. 108 and 109, p. 321, *ante*). When *d* is taken off, the "pawl" *c* must be slipped out and replaced with a larger one, sent with the machine, and *d* then replaced. The result being that *d* is locked to the cutter-spindle.

If this piece has been lost, or not received with the machine, it is easy to make one out of a small piece of flat iron or steel, taking care that it extends entirely across the ratchet at the back of *d*, so as to fix it immovably on the cutterspindle. The grinding is then proceeded with as before described. If the bottom blade is much gapped it must be removed and ground on a grindstone, observing to keep the edge perfectly straight on the stone.

HINTS TO PURCHASERS.

In concluding this article, a few hints may be of service to intending purchasers and users.

Where the machine is required for exceptionally heavy work, such for instance as golf links, the question of weight should not be, and is not a consideration. A strong machine by one of the leading makers with plenty of bearing surface and as wide a cutter as possible, should be chosen. If the grass is not too coarse, a chain machine will make the best work, but anything very rough or full of stems is best dealt with by a spur-gear machine with the cutters driven at a high velocity.

For medium machines there is little to choose, except that it is the best policy where a large area has to be mown, to select as large a machine as possible for the work. The nature of the grass is an important point, though not so much as in the first case.

Where small plots are to be dealt with, the question becomes more difficult, as here the "side-wheel" machines become more keen opponents of the old machines on the score of cheapness. Here, however, again cheapness should not be allowed to stand in the way, and certainly in working among beds the older pattern has the advantage, as when the machine is fitted with a roller it may be used with far better results when overlapping a path or flower-bed. Therefore unless the lawn is a simple square patch or plot, where the "side-wheel" mower is seen at its best, the older type should be chosen. Where there are a

great many narrow strips, edgings, and borders, it is good policy to keep a small machine specially for this purpose. For sloping terraces the side-wheel machine with a long handle makes very good work, but for strips the writer prefers a small machine of the older type. Where there is a great deal of rough, coarse or long grass and herbage, one of the special machines built by the leading makers should be kept exclusively for this purpose.

Where, however, expense is a consideration, and a single machine is required to fill the post of a "servant of all work," a machine should be chosen not wider than the narrowest border, and not a cheap article, but the best that can be bought for the money. Either "side wheel" or roller pattern will answer (though the writer confesses to a leaning to the latter), but if the first be chosen it should be a high-class machine, as where miscellaneous work is undertaken the strain and wear-and-tear are much more severe. *Sydney Russell.*

NURSERY NOTES.

MESSRS. ROBERT VEITCH & SON'S NURSERIES, EXETER.

In all things connected with the introduction and cultivation of plants, the name of Veitch stands pre-eminent. Both botanists and horticulturists owe much to the Veitch family for their numerous introductions of new and rare plants. Throughout the three or four generations that have been so closely associated with horticulture, many of these introductions have been plants of much beauty or of great interest, and have become inseparably associated with this historic firm, and with the ancient city of Exeter, where horticulture still receives much attention at the hands of Mr. P. C. M. Veitch, the courteous head of the Exeter firm.

To those of our readers who are familiar with many of the plants that have gone forth from the Exeter nurseries, it may be interesting to know that their original founder was John Veitch, who was born so long ago as 1752, and who started a nursery at Budlake, near Killerton, about 1810. About 1830 the business was removed to Topsham Road, about a mile from Exeter, where it was continued till 1863, and where the celebrated hybridiser Dominy was associated with the firm. After this the site now occupied in the New North Road, known as the Royal Nursery, together with the almost contiguous Hooper Nurseries in the Howell Road, were taken. These grounds cover an area of about 12 acres. In the first we find all kinds of stove and greenhouse plants, as Orchids, Palms, Tree-Ferns, Azaleas, Camellias, Heaths, hardy perennials, and alpine plants. The other part of the ground is devoted to Roses, shrubs, ornamental trees and fruit-trees.

At Exminster is also a nursery of about 9 acres, chiefly for forest trees; while the trial-grounds at Exwick cover another 8 or 9 acres, so that about 30 acres altogether are occupied with a collection of attractive plants and many novelties, and a goodly stock of most things into the bargain. A peculiar effect indeed in the grounds at Exwick is constituted by the rows of bushes of the spiny *Citrus trifoliata* or *Egale sepiaria*, or the golden, drop-like flowers of *Edwardsia grandiflora*, as well as of the Strawberry-tree, *Benthamia* (*Cornus*) *fragifera*, any number of plants of which are standing in the open—a sufficient proof of their hardy character in this locality. Here are also quantities of *Xanthoceras sorbifolia* and any

number of Christmas Roses, including the fine form grown in this county, *Helleborus major*, a sturdy-growing plant with pure white flowers. A well-known and much-admired plant also, of which we see quantities, is the Fire-bush (*Embothrium coccineum*), which, it is known, grows well in the open air in Cornwall.

Time, however, will not allow us to stay longer in this pleasantly-situated spot, from which one gets the prettiest possible view of Exeter, with the towers of the Cathedral in the centre of the picture, and a distant view of Woodbury Common stretching away to the right; but in leaving, one cannot help being struck by the beautiful carpet of pale blue, covering a space of about 60 square yards, and made up entirely of *Mysotis dissitiflora*. In our inspection of the nursery in the New North Road, we were shown a large number of plants of much interest, and many novelties of which we can only refer to a small selection. A splendid plant for conservatory or greenhouse is the beautiful yellow-spathed *Richardia* (*R. Elliotiana*). It is a rich, pure yellow with a broad trumpet-like tube, the deeper yellow spadix being almost concealed within the tube. The leaves, which are thicker and of a brighter green than those of the well known white-spathed species, are evenly spotted and marked with white. Amongst other plants suitable alike for greenhouse and outdoor cultivation, several of which have proved hardy in Devon and Cornwall, may be mentioned the Chatham Island Forget-me-Not (*Mysotidium nobile*). It is notable for its very large racemes of blue and white flowers, and large glossy deep green leaves. This plant which forms a bush 2 to 3 feet through, has proved hardy in warm positions.

A plant of a very different habit is the new Japanese Banana (*Musa Basjoo*), a plant strongly recommended for warm sheltered gardens, having stood out of doors in Cornwall for four years or more, and passed through last winter, severe and lengthened as it was, in safety at Exminster. Amongst Palms suitable for greenhouse or room, or even for garden culture in warm situations, we were shown *Phoenix canariensis*, and informed that it has proved hardy at Torquay. The beautiful *Cocos australis* was also shown to us as a hardy Palm in sheltered situations in Cornwall.

At a time when so much attention continues to be centred in South Africa, the so-called Transvaal Daisy (*Gerbera Jamesoni*) naturally attracts notice, as well as the Transvaal Marguerite (*Dimorphotheca Eckloni*). The habit of the plant, and the beauty of the flowers of the former, are strong recommendations for a place in the greenhouse; besides which, it does well out-of-doors, and has proved hardy in sheltered positions in many parts of England. The delicate appearance of the Transvaal Marguerite has been so recently referred to in the columns of the *Gardeners' Chronicle*, that we can only confirm all that has been said in its favour.

The well-known *Camellia Sasanqua*, with single red and double white flowers, was shown to us as being peculiarly adapted for training against walls, and being introduced from Japan, is harder than those from China. A handsome hardy shrub is *Hydrangea Bretschneideri*, and the beautiful *Poinciana Gilliesii* as a wall plant suggests that it ought to more grown than it is. The same may be said of *Ribes speciosum*, the bright red flowers of which are admirably set off by the wealth of small deep green leaves. This plant flourishes well against a warm wall at Exeter.

Rhododendrons and *Azaleas*, as might be expected, are much in evidence at the Exeter

nursery; grand flowering specimens were to be seen on the occasion of our visit, of many of the best known varieties, including the lovely sweet-scented pale pink blooms of *Rhododendron Mrs. Butler*, and the pale lemon variety raised by James Veitch the elder, named *ochroleucum*. Japanese Maples are grown here with very satisfactory results, for though they attain their best growths and finest tints in good soil and sheltered positions, all the varieties in the open ground, and in some exposed situations, seem equally to flourish, the graceful foliage, together with the delicate greens and rich red tints being fully shown off in the bright sunlight that prevailed at the time of our visit.

Amongst indoor plants that are perhaps not sufficiently known, we may mention *Lotus peltorhynchus*, known as the Pigeon's Beak, in reference to its singular flowers, which are of a brilliant scarlet colour, and have

the firm of R. Veitch & Son has given special attention, namely, herbaceous and alpine plants, including bog plants, and perhaps more particularly hardy Caeti. In this connection the following were particularly attractive:—*Androsace Chumbyi*, with its rosettes of bright pink flowers; a new introduction from the Himalayas, *Lithospermum canescens*, with golden-yellow flowers; *Erigeron compositus*, blue, from Colorado. Of *Sarracenias* we noticed a large stock, especially of *S. purpurea*, which may have been grown to meet a prospective demand, such as arose some twenty years ago, when the plant was boomed in America as a remedy for smallpox! Mr. Veitch, however, assured us that it was not as a medicinal plant that he grew it, but for use in bog gardens and rockeries, for which he had a great demand. Such, indeed, would seem to be the case with the *Venus Flytrap*, (*Dionea Muscipula*), for a very large stock of

VIEWS FROM THE RECENT TEMPLE SHOW.

IN our present issue are three illustrations from photographs taken by Mr. A. E. Smith at the show of the Royal Horticultural Society in the gardens of the Inner Temple, a full report of which was published in the *Gardeners' Chronicle* for last week. The first of these, on p. 366, will give a good idea of the group of *Sarracenias*, *Darlingtonias*, &c., shown by Mr. A. J. A. Bruce, Edge Lane Nurseries, Chorley-cum-Hardy, Manchester. As was stated in our report, some of the species were shown in very fine condition, as *S. Sanderiana*, *S. Mooreana*, *S. Wrigleyana*, *S. Tolliana*, *S. flava maxima*, *S. Patersoni*, *S. melanorhoda*, *S. Chelsoni*, *S. Williamsiana*, *S. Flambeau*, the dwarf *S. psittacina*, &c. *Darlingtonia californica* var. *rubra*, in which the hood is of a reddish-brown tint, was awarded a First-class Certificate. The figure on p. 377 illustrates some Peas shown in broad pans by Messrs. J. Carter & Co., High Holborn, London; the variety is their Dwarf Forcing Pea. The model of a Japanese garden (fig. 130) was one of the many exhibits of Japanese dwarfed trees present on the occasion.

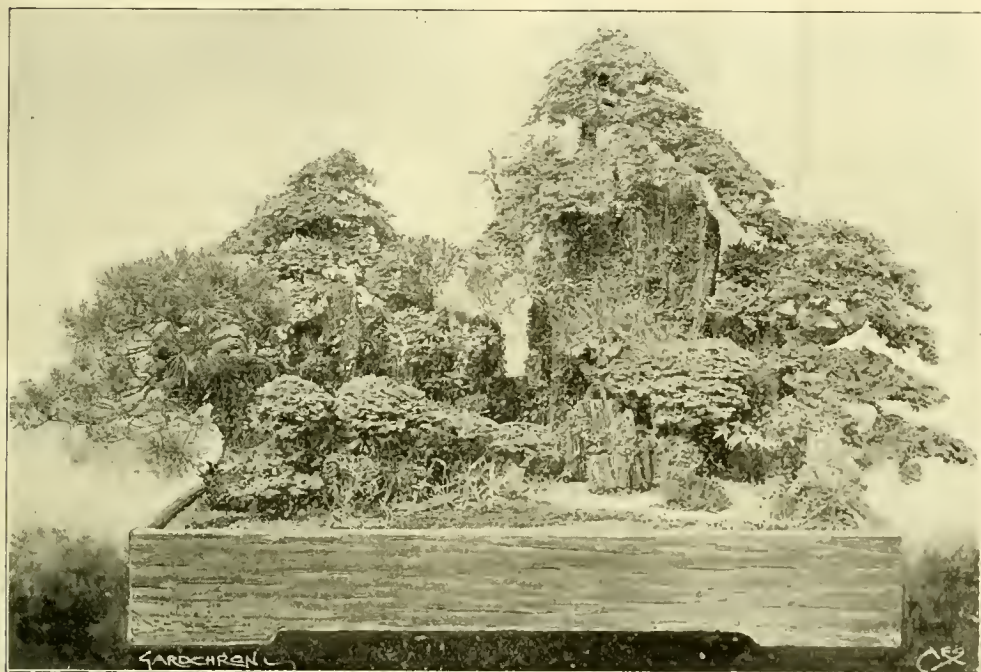


FIG. 130.—DWARF JAPANESE GARDEN, EXHIBITED AT THE TEMPLE SHOW.

SEPARATION OF MIXED CHARACTERS.

IN the offspring of hybrid plants, the phenomenon of dissociation of characters which were combined in their parents is common enough, and is due to reversion, the reproductive gemmules sorting themselves out as it were in the pollen grains and ovaries according to certain laws, which seem to determine the results on definite lines to judge by, at any rate, Mendel's experiments. There are, however, dimorphic plants which cannot be imputed to hybridisation, or even varietal crossing, and which nevertheless must, adopting the pangenetic hypothesis of Darwin, be pervaded with gemmules of two classes, as distinct from each other in their constructive faculties, as those of two quite different species. A marked example of this kind exists in a varietal form of *Scelopendrium vulgare*, found many years ago near Falmouth by Miss Drummond, and hence named *S. v. crispum Drummondiae*. The non-hybrid character of this Fern is established at once by the solitary character of the species in Great Britain, and that it is not a natural cross between two varieties we must assume from the fact that varieties are numerically excessively rare, and that the marked peculiarities of this particular type are not known to exist as separate types at all.

This Fern is practically unique as an example of complex variation, the normal flat strap-shaped frond of the species being dimorphically transformed into two types, one with smooth-edged fronds, extra long and narrow, and having a very broad, flat ramo-digitate crest at the top, sometimes 9 inches across; the fronds, moreover, are undulate in the plane of the lamina, the rachis curving repeatedly switchback-fashion. The fronds are fertile, bearing short sori at intervals. The second type of frond is similar as regards the features described, but has all the edges deeply flabiate, and cut into long slender segments, the points of which are aposporous, producing prothalli freely when severed and layered, and such prothalli yielding plants in the normal sexual manner.

Prior to the discovery by the writer of the aposporous character of the flabiate fronds, which are mixed with the smooth-edged ones

a long, narrow, recurved standard, not unlike the beak of a bird, that are borne in bunches amongst the crowded leaflets; those features, together with the drooping habit of the plant, often hanging down 2 feet or more from the pot, make it, especially when seen in quantity, one of the most singular plants in cultivation, and very unlike a leguminous plant. It is a native of Teneriffe.

Another plant equally singular and beautiful is *Ochna multiflora*. The plants of this species were in their fruiting stage, and in this state are perhaps more showy than when in flower. The peculiarity of this plant is that the actual fruits, which are shining, black, seed-like bodies, are seated on a globular receptacle of the shape and size of that of a Strawberry, and of a bright crimson colour.

In passing through the Orchid-house we noticed a fine mass of *Cattleya Mendeli*, in a 7-inch pot, with sixteen or seventeen flower-spikes; and in the fernery we were reminded, while admiring some well-grown plants of *Adiantum Farleyense*, that a saleable stock of this beautiful Fern was first raised here.

We cannot close this notice without a reference to a branch of plant-culture to which

young, healthy plants were flourishing in one house.

In one part of the rockery was a group of hardy Caeti, which were by no means in a sheltered position, but all of which had been established there for some years without any protection through the winter. Amongst them we noted the following:—*Opuntia Rafinesquii*, *O. xanthostema*, *O. humilis*, *O. spirocentra*, *O. rhodantha*, *O. fragilis*, *O. arborescens*, *O. missouriensis*, *O. Camanchica*, *Cereus phoeniceus*. Some of these have flowered in their present position.

With regard to the pretty Cucurbitaceous climbing plant, *Thladiantha dubia*, which we remember first seeing in fruit on the garden-wall of the late Daniel Hanbury, on Clapham Common, we learnt from Mr. Veitch that a plant which had been placed on the end of a greenhouse wall facing south, had failed to appear the following year in the position where it was planted, but came up round the west side of the house where the root was found, though it was quite impossible that it could have been moved to the new position it had taken, thus showing the hardness of the plant. John R. Jackson.

quite indiscriminately, a number of plants were raised from the spores, and among these offspring the faculty of dissociation of the two characters asserted itself, since a number of these proved entirely and constantly fimbriate, the smooth-edged fronds being apparently quite eliminated. A very fine specimen of this class, bearing dense corymbose fringed tassels, instead of flat, digitate ones, and with the fimbriation greatly enhanced, was brought to the writer's notice two years ago by the raiser, Mr. H. Bolton, of Warton, near Carnforth, who very kindly gave me a portion of a fringed crest, and also with a view to obtaining a perfectly true specimen, a base of one of the old fronds, i.e., the fleshy permanent portion immediately attached to the caudex. The fringed crest being layered, produced in due course a mass of prothalli and young plants, more of which promise to be fair reproductions of the fringed type; but one has thrown up several fronds all smooth-edged, though otherwise typical of the variety. The most unexpected development, however, arose from the frond-base. These bases, as is now well known, if severed, and even if cut through into two, and inserted in soil, or dropped into a tumbler with a little wet sand at the bottom, and kept close, develop in the course of a few months small excrescences apparently from any point, including the cut surfaces themselves. These excrescences are buds, and frequently a single base in this way may yield a cluster of youngsters, usually typical. In this case, however, only two such buds were formed, one on each side of the basal piece; and to my great surprise, as these two developed, they presented another example of dissociation, one being quite devoid of fimbriation, though frilled and crested, while the other was an extreme type of the aposporous character, the fronds so far being attenuate, with deeper cut basal lobes, and stiff, radiating, fimbriate crests, altogether different indeed from its immediate neighbour developed from the same base, fashioned from the same sap, and originating under identical circumstances from the outset. Here, it will be seen, the parent had thrown off the plain-edged character entirely, though derived from a spore of a dimorphic form, and yet retains within it the dimorphic faculty to a sufficient extent, not only to yield two kinds of plants through its aposporous fringes, but independently of sexual action, to do the same thing by asexual buds abnormally induced from the severed frond bases. The two types of frond do not appear to be indeterminate at all: they are never half and half or intermediate in any way, hence we have the curious phenomenon that the primary cells which initiate the formation of a frond, have, as it were, at the outset two different architectural plans to select from; but what law determines their selection is part of that great puzzle which variation still constitutes for all investigators. Chas. T. Druery, F.L.S., V.M.H.

ALPINE GARDEN.

PRIMULA OREODOXA.

THIS *Primula*, received from Mr. Charles Sprenger in 1901, has been in bloom in a cold frame for some time, and appears as if it would become a good addition to our hardy *Primroses*. It is of strictly herbaceous habit here, and although it was wintered in a pot in the cold frame, the conditions were such as would test its hardiness well enough. The pot was unplunged, and the frame had no covering in the most severe weather of the winter. Then

the plant was a weakly one to begin with. It is now growing freely enough, although it looks as if it would be a slight grower at the best. According to the monograph of Dr. Ferdinand Pax, *P. oreodoxa* is a native of Eastern Tibet, and the same authority classes it with his section *sinensis*, and in the division of *peculiformia*. This is evident from the form of the flowers, and the plant I have here appears to correspond to Dr. Pax's characters. As grown in the frame, it is about 6 inches high, and has a good number of small flowers of a deep, warm purplish-rose. The leaves are of a pretty form, and from a garden point of view this *Primrose* should be a welcome gain, if quite hardy, as I anticipate. I have grown it in sandy peat, and it came into bloom towards the end of April. S. Arnott, Carsethorn-by-Dumfries, N.B.

The Week's Work.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bickton, East Budleigh, Devonshire.

The Grape-Vine.—The side-shoots of the rods should not be less than 12 inches apart, and two shoots only should be left on a spur, for it is usually by the crowding of the young growths that so few bunches show. Shoots on which bunches of Grapes are apparent should be stopped two joints beyond the bunch, and one bunch per shoot retained, for any over-cropping will be sure to weaken the Vine for one year or longer; moreover, the berries will be small and flavour indifferent. Thin the berries early, and secure the shoots to the wall betimes, these being easily broken off by the wind. In light soils, and even in those that are heavy, if the border is well drained artificially or naturally, bi-weekly applications of water will be necessary in hot, dry weather, while the fruit is developing. In lieu of liquid-manure, a sprinkling of Thompson's Vine-manure after the soil has been moistened, may be applied. After flowering, keep the foliage free of red-spider by syringing; and after the thinning is finished, apply a mulch of partly decayed stable-dung.

Bush Fruits.—Liquid-manure from the stables or cow-sheds may be applied to the bush-fruit quarter, Black Currants especially benefiting thereby. Let the land be frequently hoed, in order to kill the weeds whilst of a small size, and prevent it from cracking. The bushes should be examined once a week, and if the caterpillars of the sawfly, or traces of red-spider be observed, syringe the bushes, also the plants against walls and fences, three or four nights in succession with water having a small quantity of soft-soap mixed in it; or lime-water made with 1 lb. of lime to 4 gallons of water, used after it has got clear, will generally rid them of this last pest. The berries are now of about the right size for bottling, and those fruits that are nearest to the ground should be the first gathered. This fruit, also Currants trained against walls, should be afforded a mulch, as they have usually to be kept for a considerable length of time.

Grafted Trees.—These are now growing freely, and the clay or wax should be removed, the ties loosened, and the scions made secure against the wind by having pieces of lath tied on to the stock, to which they should be fastened. Remove all growths from the stock. Trees infested with American-blight should have the infested place touched with a small brush dipped in petroleum.

THE KITCHEN GARDEN.

By T. TURTON, Gr. to J. K. D. WINOFIELD DIGBY, Esq., Sherborne Castle, Dorsetshire.

Coleworts.—For obtaining plants to set out on land from which crops of early Potatoes, Horn Carrots, &c., have been taken, a sufficient quantity of seeds of the Rosette Cole-

wort should be sown forthwith; but if the hardy Green Colewort is preferred, the second week in the month will be soon enough to sow, this variety hearting earlier than the Rosette. In hot, dry soils, the germination of seeds at this season should be hastened, by applying water to the seed-beds in dry weather. My practice is to sow thinly broadcast in any disused forcing-beds, the soil being moistened, and sheep-hurdles being placed on the frames instead of the glass-lights, these shading the beds till the plants come up, when they are at once removed.

Autumn Giant Cauliflower and Veitch's Self-protecting Broccoli.—A sowing of each of these, if made in the manner advised for Coleworts, soon make strong plants. The plants should be placed on sheltered borders for the late autumn and early winter supply. These crops are of more value than the earlier crops, and turn in after frost has destroyed the Runner Beans, and they afford heads till the winter Mammoth Broccoli, &c., come into use.

French Beans.—If the earlier sowings are not yet come through the soil, let the seed be examined here and there, and if many of them are found to be rotting, destroy the entire sowing, making another forthwith. Gardeners who have sown Beans successively, as advised in earlier Calendars, will have an advantage this season over others who have not done so. If French Beans are not required after the Runner Beans have become fit for use, and the earlier sowings of the latter have rotted, it will be necessary to make sowings of French Beans later in order to have pods for use till such time as the Runner Beans are ready for consumption.

Parsnips.—It is of importance that the plants be thinned at an early date, and in most gardens the operation will have been carried out. The thinning is best done after rain, and the distance at which the plants should be left apart is about 9 inches for ordinary roots, and 15 inches when extra fine roots are desired, and the land is in very good heart. After thinning, or as soon as the ground is dry enough, let it be Dutch-hoed.

THE FLOWER GARDEN.

By R. DAVIDSON, Gardener to EARL CADOGAN, Culford Hall, Bury St. Edmunds.

Plants with Fine Foliage.—If from lack of cold frames and other shelters the more tender bedding plants have not hitherto been removed from the pits and houses, some of the frames will now have had their occupants planted out, and space may now be found for *Alternantheras*, *Coleus*, *Iresine*, *Mesembryanthemum*, &c., which should be inured to outside conditions gradually, previous to planting them in the beds. These foliage plants should be placed close to the glass, so as not to become drawn, especially *Coleus Verschaffelti* and *Iresine Lindenii*, short-jointed, sturdy growth being an essential with these plants, also foliage of a high colour. In order to preserve tints of the foliage of these plants during the first few days after removal from the houses, it may be necessary to slightly shade them from bright sunshine, the frame-lights being tilted during the daytime a few inches either at the top or sides. Sub-tropical foliage plants may be removed forthwith to a cool, airy structure, where they may obtain full sunshine. Amongst varieties of these which are of value for their flowers are *Cannas*, the growing of which in pots until about the second week in July is advisable, when in an ordinary season the flower-spikes would be about three parts expanded; if then they are planted firmly in the ground in a situation sheltered from the stronger winds, and when necessary afforded copious supplies of water, and occasionally manure-water, the season of flowering will be considerably lengthened, and larger flower-spikes and finer blooms obtained—moreover, the foliage will be less gross than is the case when they are planted at any earlier date than that given.

Seeds.—The common Wallflower is one of the most useful spring bedders, and the varieties introduced of recent years are of very beautiful shades of colour, and the gardener is enabled thereby to make very pleasing arrangements with the plants in the spring garden, even if these plants only be employed. Seeds may be sown broadcast at the present date in small beds of light soil made smooth, the seeds being covered less than a quarter of an inch with finely-sifted soil. The seedlings when large enough should be pricked off in nurse-beds in a well exposed position, preferably in the kitchen-garden, in a soil not too rich. Beyond weeding, stirring the soil occasionally, and affording water in dry weather, the plants will need but little attention. Canterbury Bells, syn. Campanula Medium, calycanthema, both single and double-flowered blue and white varieties, are worthy of cultivation in everyone's garden. The seeds should be sown at this date on the surface in well prepared soil on a border having a west aspect, and the seedlings when large enough transplanted to beds at about 9 inches apart, the ground having been well enriched with rotten manure. The plants may be set out in the autumn or early spring where it is intended they should flower. Seed of quite a number of plants for spring and early summer flowering, such as double-flowered Daisies, hardy Primulas, Sweet William, and Sweet Rocket, should be sown early this month, as well as those of many herbaceous perennials, as Lupinus polyphyllus, Delphiniums, Aquilegias, and perennial species of Campanula, Antirrhinums, &c.; and given liberal treatment plants of a suitable size for planting out in the autumn may be obtained.

PLANTS UNDER GLASS.

By J. C. TALLACK, Gardener to E. MILLER MUNDY, Esq., Shipley Hall, Derby.

Pentas carnea cuttings strike readily in sandy soil in a propagating pit, at this season. When of fair size, and growing freely, they may be removed to an intermediate-house, or garden frame set in a sunny spot, and treated as plants of the intermediate-house.

Vallota purpurea.—Mistakes are made with this useful plant through overlooking the fact that it makes its growth in the winter and rests in the summer. The growth should now be complete, and much less water should be afforded. Bulbs which receive water at seasons when it is not required, usually get infested by the bulb-mite.

Poinsettias.—From now onwards as fast as young shoots of about 3 inches in length can be obtained, they should be removed from the plants with a slight heel, or rather cut as close to the old stems as possible, the bases covered with silver-sand for half an hour in order to arrest the flow of sap, and be inserted singly in small pots filled with sandy peat and loam, watered in, and plunged in a hot-bed with a bottom-heat of from 75° to 80°. In this the cuttings will strike readily, providing they have not been forced into growth too quickly by artificial heat. The plunged cuttings should be covered with a close fitting hand-light, cloche, or, in the case of a large number of cuttings, an ordinary garden-light made as air-tight as possible, so that rapid evaporation of moisture be avoided. When as many plants have been obtained as are required, a few of last year's plants from the latest striking should be cut back to a dormant bud and grown on, such plants furnishing the best kind of cuttings another year; and they are useful also for the heads of bracts they produce, though these are inferior in size to those from the earliest-struck cuttings, if the latter are well cultivated.

Winter-flowering Carnations.—If the plants are now well established, as they should be, in large 60's and 48's, shift them without delay into the pots in which they are to bloom, which should be of a size just large enough, say 7 inches diameter, or large 32's, and this only in the case of very strong plants, the

rest going into small 32's, or 6½-inch pots. Treated in this manner, the plants flower well, and they may be fed with manure when the pots fill with roots. The best kind of loam should be employed at this repotting, and it should have been in stack for some months; and a small quantity of leaf-mould, or even peat, may be used for lightening a rather unctuous heavy loam, together with a liberal quantity of sharp sand, some bone-meal, or finely broken oyster-shells, and a very light sprinkling of soot. Put a fair amount of drainage materials into the pots, and in potting press the soil firmly, return the plants to the greenhouse or cold pit, and keep them therein till the roots have permeated the new soil.

Fuchsias.—Pot on young Fuchsia plants when well rooted, arrange them thinly in a glasshouse, and syringe them freely night and morning. If not required to flower early, pinch out the points of every newly-made shoot, but stop the pinching seven or eight weeks before the plants are required to be in flower.

Richardias.—The plants of *R. æthiopica* now going over should be placed out of doors against a warm wall to mature their foliage, and the amount of water afforded reduced by degrees. Good crowns and large spathes may be obtained from divided plants set out in trenches like Celery, but the plants are less useful and less prolific of spathes than potted plants that are afforded a decided period of rest, and then placed forthwith in the pots in which the spathes will be produced.

Seed-sowing.—More seeds of *Primula sinensis*, and those of the main batch of *Cinerarias*, should now be sown, the latter in a cold frame, placed on the north side of a wall.

THE ORCHID HOUSES.

By W. P. BOUND, Gardener to J. COLMAN, Esq., Gatton Park, Reigate.

Cymbidium Lowianum, *C. Lowii-eburneum*, and *C. grandiflorum*.—Plants of this species now growing may be repotted, and if necessary without delay. These plants should not be disturbed at the roots oftener than is necessary, but any of the plants which may be growing in small pots will be benefited if the pots are well filled with roots if they receive a shift. The division of specimen plants entails much care in the operation and the after-treatment. Even with great care exercised, some considerable period of time elapses before a plant quite recovers from root-disturbance. If there are many specimens in a collection, one or two only should be divided in any one year, so that the annual display may not suffer seriously, and yet the whole of them kept in a healthy condition. The compost should consist of good turfy-loam two-thirds, and one-third good Oak-leaf soil, and some finely broken crocks mixed together. Well-rooted plants simply requiring to be repotted do not need a large amount of drainage, a few crocks of large size sufficing; and over these put some lumps of turfy-loam, and pot firmly, keeping the base of the leading pseudo-bulbs and the top of the compost on a level with the rim of pot. Some of the outside roots should be liberated so as to enable them the more readily to enter the new compost. Divisions of large plants, and of any which may have got into a bad condition, should be afforded drainage to half the depth of the pots; and the division of large plants whose roots envelop the entire mass of compost must be patiently carried out, as the future well-being of the plant depends upon the care which is taken. The roots should be released tenderly, so as to enable the whole of the old compost to be taken away before any attempt is made to divide the plant; and when the entire mass is cleared of compost, cut away all of the dead and broken roots, and separate the roots coming from the various divisions of the plant. Having done this, the plant is ready for division. The back or hindmost pseudo-bulbs should then be removed, and if the variety is worthy of propagation, these will soon

"break," if laid on the shingle on a stage. In making up a specimen, place two or three good leads together in 8 or 10-inch pots, according to the strength of the leads, and the plants next season will be ready to repot, and eventually they will take the places of the older specimens when these in their turn need rejuvenating. Divided plants must be afforded water very judiciously till the roots have pushed into the new compost; but to others which are well rooted and vigorous, water may be freely applied till growth is finished for the year. The syringing of the plants in bright weather is an important point in the management of *Cymbidiums*, checking, as it will, the increase of red-spider. Divided plants should be very lightly syringed, or too much moisture will be conducted to the compost, and it is very essential to syringe often till the roots start anew; moreover, the plants should have ordinary shading, and the glass painted as well. *Cymbidiums* do not require so much heat as gardeners usually afford them. A temperature that does not fall below 50°, rising with sun-heat to 60°, is ample in winter; and during the summer a night temperature of 55° to 60° with a free circulation of air, rising during bright weather to 75° with abundance of air and no artificial heat, suits the plants.

Cymbidium eburneum.—This species being a weaker grower than the others noticed, should be afforded more drainage than they, and be grown in proportionately smaller pots, otherwise the treatment is identical.

FRUITS UNDER GLASS.

By JAMES WHYTECK, Gardener to the DUKE OF Buccleuch, Dalkeith, Scotland.

The Latest Vines now in flower, or with berries already set, should be afforded a night temperature of not higher than 70° nor less than 65°, and by day with sun heat, 85° to 90°, the air being kept moist. Varieties that are shy setters should be helped with pollen conveyed with a camel's-hair brush from varieties which have abundance. Grapes that set fruit thickly, should be thinned early and without loss of time. Thin the late varieties severely, especially those that grow to a large size and have to be kept during the winter. Reduce the number of bunches so as to reserve rather a light crop than a heavy one, so as to ensure a good finish, for only such will keep well till the spring. Pay frequent attention to the thinning of the shoots, and allow two leaves or more, if space permits beyond the bunch; and stop all sub-laterals at the first leaf. At the finish of the thinning of the berries, afford the border a sprinkling of vine-manure, apply water forthwith, and mulch the border if the soil be light with a 2-inch layer of well decayed manure. Thrips are apt to infest Vines, if pot plants are grown in the vineries, and if these pests are discovered, let the vineries be fumigated with Nl-All, unless the Vines are Muscat of Alexandria, the leaves of which must be sponged with a safe insecticide, it being more tender and susceptible to injury than that of other varieties.

The Late Peach-house.—Delay the first thinning of the fruit until it can be seen which fruits are going to swell, and then leave more than should remain to ripen, as some are sure to fall during stoning, and the final thinning may take place when that process is at an end. Leave as many suitably placed shoots as will furnish the trees with fruiting-wood next year. If aphides attack the leaves, syringe the trees occasionally with weak quassia water or soapsuds; the latter is also a good preventive of the mildew, from which some varieties of the Peach are liable to suffer. Unless on nights that are very cold, ventilate the house freely. In unheated orchard-houses, some trees of Peaches and Plums may have failed to set a crop because the shoots are gross or unripened, or the roots too deep in the border. Such trees may be lifted when in full leaf and replanted in the same place with their roots nearer the surface, shading them for a time and syringing them. The medium-sized shoots produced will then ripen readily and bear fruit next year.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plant 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 thankfully receive and 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, JUNE 7 { Royal Botanic Society's Meet.
Société Française d'Hort. de
Londres Meeting.
German Gardeners' Society,
London, Meeting.

TUESDAY, JUNE 10 { Royal Horticultural Society's
Committees Meet.

WEDNESDAY, JUNE 11 { Yorkshire Floral Fête (3 days).
German Gardeners' Society,
London, Meeting.

SATURDAY, JUNE 11 {

WEDNESDAY, JUNE 18 { Royal Botanic Society's Meet.

THURSDAY, JUNE 19 { Linnean Society Meeting.
Jersey Agricultural and Horti-
cultural Society Rose Show.

SALES FOR THE WEEK.

TUESDAY, JUNE 10—
Stove and Greenhouse Plants, Orchids, Tools, &c.,
at Great Gearies, Barking Side, by Protheroe &
Morris, at 12.30.

WEDNESDAY, JUNE 11—
Unreserved Clearance Sale of Stove and Greenhouse
Plants, Orchids, Live Stock, &c. at "Fairfield,"
200, Denmark Hill, S.E., by order of C. E. Gunther,
Esq., by Protheroe and Morris, at 12.30.—Palms,
Plants, Bulbs, &c., by Protheroe & Morris, at 12.

FRIDAY, JUNE 13—
Orchids in variety, by order of Messrs. Sander &
Sons, 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
—60.2°.

ACTUAL TEMPERATURES:—

LONDON.—June 4 (6 P.M.): Max. 64°; Min. 56°.
June 5—Fine.

PROVINCES.—June 4 (6 P.M.): Max. 58°, Scilly; Min.
49°, East Coast.

The Horticultural Hall. THE Temple Show has come and gone. It was neither materially better nor appreciably inferior to its predecessors. Bearing in mind the very unpropitious nature of the season, and the exacting limitations of the site, the show may be pronounced to have been a great success. That success was well earned, for the administrative officers had spared no pains; and the Press, whose labours on such occasions are by no means light, have to thank the Secretary, the Superintendent, and the officials generally for the facilities offered them, without which their efforts would have been difficult indeed.

The next great function will be the Rose Conference at Holland House, and as this is fixed for the two days preceding the Coronation, whilst the Coronation-day itself and the days following it will be "shut up" days, it may be imagined what the difficulties in the way of the Press will be. All these, however, are temporary matters, and the Press may be trusted to deal with the emergency in the most satisfactory way possible.

Of more lasting importance is the question of the Horticultural Hall. For some time past we have heard little or nothing of this scheme, but on casually turning over the pages of the Catalogue of the Temple Show, we find, sandwiched in between advertisements, band-programmes, and the

like, an announcement which will give great gratification to those interested in the scheme, and will, we hope, prove a stimulus to energetic effort. It has been a source of interest not unmixed with amusement to us, to read what has been said against the scheme. The self-same arguments, enforced in similar language to that we ourselves employed, when discussing the preposterous garden schemes in the more or less inaccessible wilds of Kent and Surrey, were brought forward against the Hall—excellent and cogent arguments, we admit, but for the fact that, in this case, they were based on false premises. The circumstances are so totally different, that the pleadings are wholly irrelevant. But, as our view has been upheld by very large majorities at two successive meetings, it is needless to slay the slain. Rather may we most earnestly appeal for support to those who wish to see the Royal Horticultural Society housed in a manner befitting its dignity and importance, and the general convenience of horticulturists. Already, without any special effort having been made, some thirteen thousand pounds has been promised, and we cannot doubt that now the project has been fairly launched, the required sum will quickly be forthcoming. We by no means advocate expenditure in superfluous decoration, but it is evident that the building must be handsome and substantial of its kind, and specially that it must be convenient. It must be suitable not only for the primary requirements of the Royal Horticultural Society, but also for the benefit of horticulturists generally. It must be the common centre for all legitimate horticultural purposes, and the common meeting-place for all the horticulturists of the Empire. With this as the leading principle we shall do well; the further we recede from it, the less satisfactory will be the result. To carry out the scheme, with the extra expenses which are sure to arise in the course of the work, at least three times the amount at present promised will be required. We cannot doubt that the sum needed will speedily be forthcoming. The Society is now so strong, the need so great and so obvious, that we have ample justification for our forecast. The nurserymen who benefit so largely by the exhibitions might surely be relied on for a very large contribution; the general body of Fellows, and even the casual visitors to the Drill Hall may all be expected, in their degree, to contribute of their abundance or of their modest store, to the completion of this most desirable consummation. We append the notice that has been issued by the Society:—

"At a special general meeting of the Society, held on March 21, 1902, and largely attended, it was resolved to adopt a proposal to build, on a site facing Vincent Square, Westminster, a Horticultural Hall and Offices, in commemoration of the Centenary of the Society in 1904."

"The Society has as yet no home of its own—a want of such national importance that, as long ago as 1890, His Majesty the King addressed to the Fellows the following words: 'I sincerely hope that your labours to obtain a Hall may be successful, for I feel sure that it would be of the greatest use and advantage.' Since 1890 the necessity for increased and better accommodation has become more and more obvious. The Drill Hall is badly lighted, and it is frequently impossible to find room for

the plants sent; while the valuable work of the Committees is carried on under great difficulties and constant interruption. During the afternoon the Hall is often so crowded that circulation becomes impossible, and so noisy that the lecture is inaudible. The limited office accommodation, which cannot be increased in Victoria Street, is a serious impediment to the proper discharge of secretarial and other work.

"The present position of the Society fully justifies the adoption of the proposal to build. It has now 6,000 Fellows on its roll, and large numbers are continually joining it. The financial position is satisfactory. But even more important is the high credit enjoyed by the Society among horticulturists of every class. At home and abroad it is the recognised head of British horticulture, and many of the most distinguished scientific and practical horticulturists in the kingdom serve on its committees and contribute to its *Journal*."

"The proposed buildings will involve, it is believed, an expenditure of at least £25,000 or £30,000, towards which the following promises have been made before the issue of any public appeal:—Colville Browne, £1 1s.; Geo. Bunyard & Son, Ltd., £52 10s.; James Douglas, V.M.H., £21; H. J. Elwes, F.R.S., £1,000; J. Gurney Fowler, £500; Capt. Holford, C.I.E., M.V.O., £500; James Hudson, V.M.H., £10 10s.; The Earl of Ilchester, £300; Sir Trevor Lawrence, Bart., V.M.H., £500; F. G. Lloyd, High Sheriff of Bucks, £105; Sir Edmund Loder, Bart., £100; H. B. May, £52 10s.; George Monro, V.M.H., £52 10s.; J. Pierpont Morgan, £1,000; Paul & Son, £50; Lord Rothschild, £1,000; Baron Schröder, £5,000; N. N. Sherwood, V.M.H., £1,000; A. W. Sutton, F.L.S., V.M.H., £1,000; William Thompson, £10 10s.; Harry J. Veitch, F.L.S., £105; Mrs. H. J. Veitch, £52 10s.; James Veitch & Sons, Ltd., £250; Walter C. Walker, £25; Arthur L. Wigan, £21; Rev. W. Wilks, M.A., £25.

"It will thus be seen that nearly £13,000 out of the £30,000 required has been promised, but, as is so well known, it is ten times more difficult to collect the last half of a subscription list than the first. It is hoped, therefore, that all visitors to the Temple Show will hand in a promise of subscription to the Secretary, 117, Victoria Street, Westminster, S.W."

"It is proposed to make half of each subscription payable at Michaelmas, 1902, and half at midsummer, 1903, but the whole can be paid in at once if preferred. W. Wilks, Secretary, 117, Victoria Street."

ROYAL HORTICULTURAL SOCIETY.—At the next meeting of the Floral and Fruit Committees of the Royal Horticultural Society, on Tuesday, June 10, in the Drill Hall, Buckingham Gate, Westminster, 1 to 5 P.M., a lecture on "Weeds of the Garden" will be given by the Hon. Mrs. BOYLE, at 3 o'clock.

HONOUR FOR SIR JOSEPH D. HOOKER.—An official announcement in Berlin states that Sir JOSEPH DALTON HOOKER, formerly Director of the Royal Gardens, Kew, has been appointed a Foreign Knight of the Order pour le Mérite for Science and Arts.

VEITCH MEMORIAL MEDALS.—Amateur growers of Roses, and private gardeners, are reminded that in addition to the Silver Cup offered as a First Prize by the Royal Horticultural Society in Class 9, and also in Class 15 of the Schedule of Prizes to be competed for at the Conference on Roses, to be held in Holland Park, Kensington, on June 24, the trustees of the Veitch Memorial Fund will award a large Silver Medal, suitably engraved, to the winner of each of these Cups.

NATIONAL ROSE SOCIETY.—A meeting of the General Purposes Committee will be held at the rooms of the Horticultural Club, Hotel Windsor, Victoria Street, Westminster, on Tuesday, June 10, at 1.30 P.M., for giving consideration to the appointment of judges for the two provincial shows, the list of new Roses and of hybrid Teas, the arrangement of staging at the Temple Show, and other business. A meeting of the Committee will be held at 3 P.M. to hear the reading of the report of the General Purposes Committee as to the question of insurance, judging-books, prize selection committee, and other business. *Edward Mauley.*

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY.—At the meeting of May 14, 1902, the Floral Committee awarded First-class Certificates to *Odontoglossum Hunnewellianum* var. *nigrum* (as a rare plant), from Mr. W. C. BARON VAN BOETZELAER, Maartensdijk; to *Odontoglossum cirreosum*, from Mr. H. C. HACHE, Baarn. Awards of Merit were granted to *Oncidium Marshallianum* and *Cattleya Mendeli*, from Mr. H. HORNSVELD, Baarn; to *Primula elatior* Zwijndrecht's Gloire (as a new plant), from VAN NAMEN BROTHERS, Zwijndrecht. An Honourable Mention was made of *Odontoglossum Rossii asperum*, from Mr. H. C. HACHE, Baarn; and of *O. crispum* (importation), from Mr. C. J. KIKKERT, Haarlem. A Silver-gilt Medal was awarded to a very fine collection of *Odontoglossums*, from Mr. J. H. VAN VLOTEN, Haarlem; and a Silver Medal to a collection of Orchids, from Mr. C. J. KIKKERT, Haarlem; and a Bronze Medal to the collections of Orchids grown in various materials, from Mr. J. H. VAN VLOTEN, Haarlem; Mr. W. C. BARON VAN BOETZELAER, at Maartensdijk; H. HORNSVELD, Baarn; J. G. BALLEGO and C. J. KIKKERT. The Commission could not decide which material was the best, as each was a success. P. W. Voet, *Adj. Secretary, Overveen, near Haarlem, May 20, 1902.*

MARTINIQUE.—The following extract from a private letter to one of our correspondents bears witness to the beauty of the stricken Island:—"The scenery of Jamaica and Cuba cannot be compared with that of Martinique and Dominica; my pen cannot adequately describe the beauties of Martinique, rising smartly out of the sea, and its mountains towering away up into the skies! Dominica, too, is sublimely beautiful, with its deep gorges and primeval forests. Tremors have been felt in Dominica, and a lake on the top of a mountain is said to have gone dry, so that they are evidently within the seismic sphere of disturbance."

HORTICULTURAL CLUB.—The next House Dinner of the Club will be held on Tuesday, June 10, when Mr. HENRY STEVENS will, during the evening, speak on the subject of "Flower Photographs," which he has for so many years made a special study. Mr. E. T. COOK, Hotel Windsor, Victoria Street, is the Hon. Sec.

"WISLEY."—Many of our readers will feel concerned to learn that the late Mr. G. F. WILSON's famous garden, comprising nearly 14 acres, in addition to farm land, is shortly to be sold.

A ROSE SHOW will be held on July 21 & 25 at Belfast, in conjunction with the Horse and Sheep Show of the North-East Agricultural Association. The competitions will be open to exhibitors from any part of the United Kingdom, and the schedule includes a class for seventy-two distinct varieties. Copies can be obtained from KENNETH MACRAE, Secretary, 37, Donegal Place, Belfast.

PLECTRANTHUS AS A VEGETABLE.—In a recent issue of the *Journal de l'Agriculture Tropicale*, attention is called to a paper of M. LEMARIE on the tubers of *Plectranthus* as a vegetable. These plants are Labiates, closely allied to the already known *Stachys affinis*; they produce tubers that can be used similarly. MM. PAILLIEUX and BOIS, who introduced this plant (and also the *Stachys*), have failed to acclimatise it in France, owing to insufficient heat; but M. MAXIME CORNU introduced it successfully into Madagascar, the Congo, Gaboon, the Soudan, and Indo-China, whence excellent reports of it have been obtained, testifying to its value in countries where Potatoes do not thrive. The tubers of *Plectranthus* even exceed in amount of starch and farinaceous properties those usually cultivated in the colonies, and those of *Stachys tuberosa* (*affinis*). There are several species of *Plectranthus*, and they are not easily identified; most of them are natives of tropical Africa, India, and Malaya. At Hanoi in 1898 four small tubers the size of a nut were planted in the botanic garden, and from these M. LEMARIE raised gradually increasing crops of tubers, that in January, 1900, were as large each as a hen's egg, and in their entire weight attained to 208 kilos., or about twice that number of English pounds. At the same time, very similar tubers were distributed which, when cultivated, showed such differences that they were determined to be distinct species. In the flowers the tint of blue and the position of the stamens with regard to the pistil varied. M. CORNU gave the first plant here mentioned the name of *Plectranthus Coppini*. Dr. HECKEL prefers the name *Coleus Coppini*. MM. PAILLIEUX and BOIS received from Réunion tubers of yet another species, known in the Transvaal; these on trial proved to be those of *P. tuberosus* (*Coleus tuberosus*). Now it is identified with *P. ternatus*. In 1887 the late M. PIERRE, Director of the Libreville Botanical Garden, introduced the new vegetable into the Congo, where it was highly valued. The *Potager d'un Curieux* mentions yet a fourth species, *Coleus tuberosus*, cultivated in Ethiopia; this has since been identified with *C. edulis*. Various other species have also been reported from tropical districts, but some of these are doubtless identical with those already mentioned, and when the vegetable receives further attention, the list of distinct species will be diminished. The properties of the varieties are practically alike. In parts of Tonkin the *Plectranthus* tubers will fill an otherwise unfertile period between May and October, leaving the ground free for other crops the rest of the year. This remark applies to other countries also. M. LEMARIE judiciously remarks that before drawing hasty conclusions or planting the new tubers on too large a scale, attention should be paid to developing those that are largest of size, and in hastening on also the period of growth as much as possible. The species mentioned as producing edible tubers are *Coleus tuberosus* (Malaya), *Coleus barbatus* (East tropical Africa, India), *Plectranthus esculentus* (Natal), *Plectranthus floribundus* (tropical Africa).

THE GERMAN POMOLOGISTS AND FRUIT-GROWERS.—A meeting of the above, in connection with a fruit exhibition, will take place at Stettin, from October 2 to 4. Some of the more important subjects, as stated in a provisional order of the day, are fruit culture in the eastern maritime provinces; fruit-culture in Würtemberg, in Austria, and its economical significance; problems of fruit exhibitions and prize-giving in accordance with the spirit of the age; the progress that has been made in recent years in the production of fruit-

wines; the lessons that have been taught when a fruit-plantation has consisted of one variety and of many varieties; fruit markets and their consequences, also those of the associations of fruit-sellers; the grower of fruit as a business man; valuing fruit-trees, and the profitableness or the contrary of fruit-culture. A tolerably comprehensive list of subjects for one meeting.

DORYANTHES AS A FOOD FOR PIGS.—According to the *Agricultural Gazette of New South Wales*, the Giant "Lily" (*Doryanthes excelsa*) has been suggested as a useful food for pigs. Analyses have been made of the bulbs of the plant (here so prized, but in the Upper Mangrove district growing wild), to see if it would be valuable for fodder when other foods are scarce. It is considered that the bulbs compare very favourably as to feeding values with ordinary root crops, and that, provided they are found palatable, they should prove fairly nourishing; superior, indeed, in this respect to Parsnips, Beets, and Turnips. But New South Wales swine do not consider the Lily-bulbs eatable when raw, but prefer them boiled and mixed with a few handfuls of ground Maize. So served "the pigs consumed the mixture greedily."

EARTH-NUTS IN UGANDA, &c.—It appears that these Nuts can with ease and profit be grown in East Africa—so says the *East Africa and Uganda Mail* of a recent date. In British India 46,000 acres are under cultivation with this Nut. In the native states of India over 16,000 acres are under the same culture, and this area will yield nearly 11,000 tons; and the journal noted is of opinion that, after satisfying the home demand, sufficient would be left to pay for exportation to England and elsewhere.

A CENSUS OF YORKSHIRE GARDENERS.—The results of the census of last year in respect of the Administrative County of York are now available, and show that 8,827 male persons were enumerated as following the occupation of gardener (not private), nurseryman, seedsman, florist, &c. Classified under the four usual headings the totals are as follows:—employers, 541; working for employers, 6,071; working on own account, 2,119; others or no statement, 96. Grouped under age headings the figures are:—

| 10 | 14 | 15 | 20 | 25 | 35 | 45 | 55 | 65 | 75 | and upwards, |
|----|-----|-----|-----|------|------|------|------|-----|-----|--------------|
| 88 | 173 | 957 | 787 | 1581 | 1371 | 1442 | 1365 | 876 | 204 | = 8,827. |

It may be noted that 239 persons in addition to the above total are described as female gardeners, &c. As indicating the localities in which the Yorkshire gardeners, &c., were enumerated, we give the totals for the eight county boroughs and other areas which constitute the County of York, viz.:—

| | | | |
|--------------------|-----|--------------------|------|
| Kingston-upon-Hull | 248 | East Riding Rural | |
| Middlesbrough | 118 | District | 736 |
| Bradford | 408 | North Riding Urban | |
| Halifax | 168 | District | 455 |
| Huddersfield | 196 | North Riding Rural | |
| Leeds | 814 | District | 805 |
| Sheffield | 376 | West Riding Urban | |
| York | 227 | District | 2335 |
| East Riding Urban | | West Riding Rural | |
| District | 504 | District | 1438 |

THE CONSTITUTION OF THE SUN.—"From the window [at Heidelberg] one may look out over the Rhine plain towards busy Mannheim, as BUNSEN and KIRCHHOFF did one night when a fire was raging there, and they were able, by spectroscopic examination of the flames, to ascertain that barium and strontium were present in the burning mass. . . . One day the thought occurred, 'If we could determine the nature of the substances burning at Mannheim, why should we not do the same with regard to the sun? But people would say we must have gone mad to dream of such a thing.' All the

world knows now what the result was, but it must have been a great moment when KIRCHHOFF could say, 'BUNSEN, I have gone mad,' and BUNSEN, grasping what it all meant, replied, 'So have I, KIRCHHOFF.' *Nature*, April 24, 1902, p. 587.

A SEQUOIA "COMBINE."—All lovers of the grandly beautiful in Nature—numbering among them the readers of this Journal—will be glad to learn that an effort is being made to induce the Government of the United States to purchase and preserve the giant trees of California, now threatened by the lumberer—only the Mariposa Grove being the property of the State, the remainder being in the hands of private individuals, which spells lumberer. It would be an eternal disgrace to all concerned if these magnificent specimens of an old time variety were to be cut down and converted into furniture, &c. It is affirmed that they adorned the present landscape thousands of years since, and one of those now interested in their preservation affirms that, as far as may be, the giants of the Gold State may be considered as immortal! for they are growing now, some of them. But in these days of "combines,"—of "trusts"—why appeal to Government when a few of the so-called "millionaires" could between them sign a cheque which would save all bother or explosion of sentiment, and render the donors famous for ever—even at the expense of conferring upon the rescued giants the names of all the members of their respective families. A State so rich as is California—rich in the products of the soil and the metals—could, we imagine, easily settle the whole business in a very few days.

THE BEGONIA MITE.—We publish the following interesting note from the greatest authority on this subject. Although we have called it the Begonia-mite, it is by no means confined to Begonias. Steeping the leaves in tobacco-water has been found useful, as was recommended in our columns on November 9, 1895, by Mr. W. WATSON, of Kew:—

"The acaries on the Begonia Gloire de Lorraine is a *Tarsonemus*; it is quite possible and even probable that your correspondent is right, that it is the cause of all the damage. I cannot say for certain, as this Begonia may be subject to the attacks both of fungus and *Tarsonemus*. I did not, however, notice any fungus on the specimen sent. *Tarsonemus*, in spite of its minuteness, is quite capable of almost any amount of damage to living plants which are attacked by it. It is, in my opinion, one of the most destructive of all Acari which live upon growing plants, although, in consequence of their small size, their not making galls, and their habits, they entirely escaped notice until some few years ago; and even now the damage done by them is usually attributed to other causes, and they escape notice. Those which keep on the outside of the leaves may be destroyed by the usual applications to the under-side of the leaves, e.g., paraffin emulsion, soap, sulphur, &c., applied at intervals; but many of the species, if not all, are apt to burrow in between the two surfaces of the leaf, eating out the parenchyma as they go. They are then almost impossible to destroy without killing the plant. The damage they do often extends over large areas, and is very considerable. I think the species is *T. floricolus*, but I am not quite certain of this; they are difficult to identify, and the species are not well settled, and I have not either my library or my collections down here. *Albert D. Michael Studland*.

See also Mr. MICHAEL's note on the same subject in *Gardeners' Chronicle*, November 16, 1895, p. 586.

RHODODENDRONS FROM MESSRS. JAS. VEITCH & SONS.—Examples of some of the excellent Rhododendrons now flowering in their nurseries are kindly sent by Messrs. JAS. VEITCH & SONS, Ltd., of Chelsea, Coombe Wood, and Slough. All are of excellent quality, and represent a wide range of colouring. The white and blush varieties are beautifully marked in the upper segments, Mrs. John

Clutton having a few greenish spots; Duchess of Connaught, a distinct marking with reddish-yellow; Samuel Simpson, purplish spots; and Baroness Schroder and Sappho, claret-purple markings, the last-named being the darker; Minnie and The Queen are white tinged with rose, and spotted in the upper part with brownish-yellow; Amphion and Mrs. Wm. Agnew have fine white centres edged with rose and purple; Lady Grey Egerton is pale lilac with greenish spots; and Charles Bagley, Duchess of Edinburgh, Pelopidas, Mrs. R. S. Holford, Kate Waterer, Mrs. A. Hunnewell, Sir Humphrey de Trafford, Sylph, and others, are of various shades of bright rose and rose-crimson with different shades of yellow, green, and purple spotting in the upper segments. Of the others most distinct are Meteor, bright reddish-erimson with purple spots; Marchioness of Lansdowne, a charming rose-pink flower with nearly black markings; Old Port, purple; and Fred Waterer, purplish-rose. A fine flowering spray of the hardy shrub, *Viburnum tomentosum Mariesii*, is also sent, showing it to be a useful garden plant.

A NEW LOBELIA.—Messrs. W. CLIBRAN & SON, Altrincham Nurseries, Cheshire, have sent us a plant of their new bedding Lobelia named Mrs. Clibran. It has a very compact habit of growth, and its flowers are of an unusually deep tone of blue colour. It is stated that the variety when growing in a bed never gets far away from the roots, but remains tuft-like.

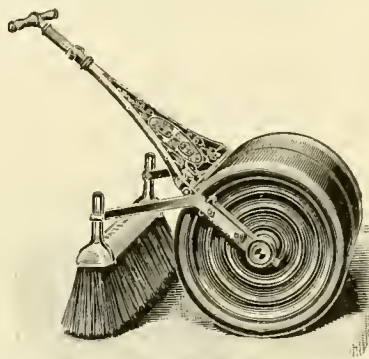


FIG. 131.—MESSRS. RANSOMES', SIMS, AND JEFFERIES, LTD., IPSWICH, COMBINED GARDEN-ROLLER AND BROOM.

VICTORIAN APPLES.—Mr. J. M. SINCLAIR, Superintendent of Exports for the Victorian Government and Representative of the Department of Agriculture, Victoria, states that the Victorian Department of Agriculture has forwarded per SS. *Oroya* 100 cases of selected Victorian Apples, which will be exhibited at the Floral Hall, Covent Garden, on Wednesday, Thursday, and Friday next, and sold on the following day. The consignment consists of the following varieties:—Rome Beauty, Scarlet Nonpareil, Stone Pippin, Yates, Rymer, French Crab, Hoover, Statesman, and Jonathan. They will be of a finer class than any previous consignment this season, having been specially selected with a view of showing the excellent quality of fruit produced in Victoria, Australia.

THE ROYAL HORTICULTURAL SOCIETY OF SOUTHAMPTON will hold its summer show on July 1 and 2 on the Royal Pier. One of the principal features of the exhibition will be the display of Roses. Orchestral concerts will take place each day. The Secretary is Mr. C. S. FUDGE.

FLOWERS AT 'EARL'S COURT, LONDON.—In aid of the French charities in England, the authorities of the "Paris in London" Exhibi-

tion, Earl's Court, London, have decided to hold, on June 12, 13, and 14, a grand battle of flowers, with dramatic fête, carnivals, and illuminated pageant, after the manner of those held in the South of France. One hundred and fifty banners will be awarded to the successful competitors. All particulars may be had from Mr. IMRE KIRALFY, Chairman, Fêtes Committee, Tower House, Cromwell Road, S.W.

A BRUSH ATTACHMENT FOR GARDEN-ROLLERS.

WITH the view of combining this sweeping operation with the equally necessary one of rolling, Messrs. Ransomes, Sims & Jefferies, Ltd., of Ipswich, have introduced a simple and time-saving brush attachment (fig. 131), which can be used with all rollers up to 24 inches in width. It breaks and distributes all worm-casts, and the roller crushes the loose substances into the ground at the same time. The brush is put out of work simply by turning over the handle of the roller.

This brush attachment, which is the invention of a practical "green-keeper," should certainly claim the attention of gardeners, and, in fact, all who value the appearance of a nicely-kept lawn.

VANDA KIMBALLIANA.

[SUPPLEMENTARY ILLUSTRATION.]

RECEIVED as a chance plant from Mr. Boxall by Messrs. Hugh Low & Co., in an importation of Orchids, this pretty species was for some years an object of interest at the Clapton Nursery, and its introduction in quantity was a subject much wished for by the late Stuart Low, who, in the eager pursuit of that object, was at last rewarded by his persevering collector, Boxall, discovering it in company with the allied *V. Amesiana*, growing on some hills in the southern Shan States, at an altitude of from 4000 to 5000 feet, and few happier men than Stuart Low could be found among horticulturists when a large consignment of both species arrived—a consignment we were privileged to inspect under Mr. Low's guidance, who, however, kept the door of the house in which were the plants locked, and the key in his own possession.

The plant was described by Reichenbach in the *Gardeners' Chronicle*, February 23, 1889, p. 232, and some time afterwards some of the specimens flowered and soon became favourites. But, as with many other species, the cultivation of the plant was attended with varying degrees of success, some cultivators finding it very unsatisfactory, while others had the reverse experience, though few succeeded in obtaining specimens so fine as those which flower every year in Captain G. L. Holford's garden, Westonbirt, under the care of Mr. H. Alexander, his Orchid-grower. Mr. Alexander has kindly communicated the secret of his success which, as it has been acquired by meeting the same difficulties which others have experienced and not been overcome by them, a description of his methods may be of use to cultivators of Orchids in general. He writes: "The plants which formed the specimens illustrated came to Westonbirt as rather poor specimens, growing on rafts, in 1899. When the roots began to move in the following spring, I took them off the rafts and put them in baskets of sphagnum-moss, together with plenty of drainage material. They were suspended close to the roof in a part where they would get abundance of light, but no direct sunshine. The house averaged during the growing season 60° to 65° Fahr. at night, and 5° to 10° higher by day, air being admitted on all suitable occasions, and the plants lightly syringed two or three times daily.

They gave some fine spikes the following autumn, but failed to open the flowers all up the spikes at the same time. So last year I decided to try another plan of opening the flowers. As soon as the first flower opened, I removed the plants to a dry, warm house where the temperature was 10° higher than the one they had been in. Here I kept them rather drier, and I found they opened their flowers splendidly, and all at one time, and they lasted much longer in perfection than was the case when the plants were grown in the cooler and moister house. After the flowering period is over, I keep them in a cooler house in quite a dry condition all the winter, and where the temperature ranges from 50° to 55° at night and a little higher by day. Free ventilation they like, and plenty of water when growing, but not to be kept too cool at that season. When preparing them for the resting period, I do not cut off the supply of water all at once after the flowering season is past, but gradually reduce it."



FIG. 132.—AN EXHIBIT OF CULINARY PEAS, BY MESSRS. J. CARTER AND CO., AT THE TEMPLE SHOW. (SEE P. 371.)

HOME CORRESPONDENCE.

CHAMÆROPS EXCELSA IN THE GROUNDS AT APPELEY TOWERS, RYDE.—There are several fine specimens of this Chinese Palm luxuriating in the grounds at Appley, which is situated high up among the trees on the banks of the Solent, and overlooking the picturesque town of Ryde. Mr. David Smith raised and planted these Palms. He sowed the seed at the foot of a wall, covering them with the ordinary garden soil to the thickness of about 1 inch; and although the seed thus sown takes a long time to come, Mr. Smith says it comes up best so sown with him. The plants which add so much to the tropical appearance of Appley grounds were 4 inches high when Mr. Smith planted them in 1872, now they are 16 feet high. I may here remark that the many horticulturalists who have visited the Isle of Wight from time to time during the past fifty years, have always been courteously received by Mr. Smith, and by him directed to, or personally conducted, over many of the interesting gardens to be met with in the Island, in which there is no better known or more highly respected gardener than Mr. David Smith, who is an old Drumlairig man. H.W.W.

KEEPING GRAPES TO A LATE DATE.—On May 20 this year I sent into the house for the dessert the last bunches of Lady Downes' Grapes, which had been kept in bottles of water in the usual manner since last October, and not a stalk was in the least degree shrivelled. For more than twenty-five years I have been accustomed to keep late Grapes, and my experience of the present season leads me to the conclusion that we leave the Grapes hanging to too late a date on the Vines, my usual time hitherto having been the third week in December. I am disposed to agree with the suggestion of a friend who saw the Grapes hanging in the Grape-room a short time before they were consumed, that it is very probable that some of the juice out of the berries returns to the Vines after the leaves are shed. The reason the Grapes were cut in the month of October was that the sashes had to be removed from the roof for the purpose of painting them whilst the weather was favourable for that sort of work. The leaves on the Vines were quite green at that time, and for that reason I postponed the cutting of the Grapes till the last moment, viz., until the painting of the remainder of the range

No more artificial heat than is absolutely necessary to ensure a temperature of from 40° to 45° should be used. T. Turton.

THE HOLLAND PARK SHOW.—Whatever may be the nature of the criticisms applied to the recent Temple Show in relation to formality of arrangement and the stereotyped character of the exhibits, certainly such defects, if they are such, are necessarily contingent upon the restricted area of the Temple Gardens, and the holding of the show annually on the same date. But there will be ample room at Holland Park, and the show will take place a month later. Those two things should be fully utilised. In the first place, the Society should have much wider tents, so as to give both exhibitors and visitors far more elbow-room; and second, the manager should endeavour to introduce greater diversity, both in material and in arrangement. But it is specially needful if visitors are to see anything, and to move in any degree of comfort, to have very wide tents, and plenty of them, to enable exhibits to be far less crowded, and to much more widely diffuse the great crowd of visitors that will inevitably be present. D.

GERBERA JAMESONI.—This plant may be successfully grown and flowered in a minimum summer temperature of 60° Fahr. One grower of the plant uses peaty soil mixed with cockle-shells. H. J. K., Bangor.

— With reference to the enquiry by your correspondent, Mr. J. Adams, Haslemere, in a recent issue of the *Gardeners' Chronicle*, as to the flowering of *Gerbera Jamesoni*, we have at the present moment plants in flower to the extent of two to three blooms on each crown. I will further add that with us there is little difficulty in flowering the plant when it has reached the age of four years. When this age is attained (or thereabouts), I do not think Mr. Adams will have any difficulty in getting his plants to flower under ordinary greenhouse treatment. We pot our plants in a compost consisting of loam and leaf-mould, and a moderate sprinkling of sharp silver-sand. During the winter months it is advantageous to slightly dry off the plants. Heaton Nichols, Bush Hill Park Nursery.

APPLES WITH SYNONYMS.—Your correspondent A. W. Godwin, Derbyshire, writing in the *Gardeners' Chronicle* for March 29, 1902, on the culture of hardy fruits, gives a list of Apples, several of which are unknown to the generality of its readers; but on referring to notes previously made, I find Lowther Castle is synonymous with Gravenstein, John Peel with Golden Noble, Brayton Hall with King of the Pippins. It would be most interesting to know what Apple your correspondent has which he calls King of the Pippins, considering he has another variety he calls Brayton Hall, which are, I take it, one and the same thing, for surely he ought to know the old King of the Pippins; but when he says it is unequalled as a dessert variety, I fear he has a much better Apple than that one, under the wrong name. Would it be asking too much of your correspondent to kindly forward a few fruits of Lowther Castle, John Peel, Brayton Hall, and King of the Pippins, in the autumn to the Editor for his opinion? as the matter is very important, and his advice would be very misleading to planters unless my version can be disproved. King of the Pippins is even now sometimes met with under the name of Seek-no-Further. James Mayne, Bieton, Devon.

DO YOUNG GARDENERS READ PAPERS OR BOOKS.—During the course of a discussion in a gardeners' association meeting, which followed upon a lecture on gardening literature recently, I was pained to hear from several head gardeners statements that young men in gardens did not read the gardening papers placed at their disposal. If that be true it is a most humiliating statement, but it certainly cannot be true of all young gardeners, as it is impossible to assume that such utter "don't-care-ness" towards the getting

was finished. I have resolved that for the future I will bottle the Grapes in November, instead of December as formerly. This subject of keeping Grapes till a late date has brought to my memory an experience at Heckfield Place towards the end of the seventies, when I was foreman there under the late Mr. Wildsmith, when, not having enough bottles at liberty in the Grape-room, the bunches of Lady Downes were not cut for bottling till the month of February—a time when the sap had begun to ascend, and the Grapes kept very badly indeed; and having no doubt about the cause, it taught both of us the lesson that Grapes, to keep them well, must be removed from the Vines not later than the end of December. In order to have success in keeping Grapes after being cut, the following rules must be observed: Select bunches far enough from the main stem to allow of enough wood to be cut as will reach well down into the water, and thus ensure against the end of the stalk coming above the water level. Another point is not to leave the berries thickly clustered together in the middle of the bunch; and in the case of thin-skinned Grapes, Gros Colmar in particular, be sure that no stalk-snags are left at thinning time, as they are so apt to puncture the skins.

of wider knowledge in their vocation exists. It is very doubtful whether young men in gardens to-day are not, in some respects, much worse off in the matter of literary information than they were some 40 or 50 years ago. Then there was none of that tempting, competing literature existing which does so largely attract young men, and acts upon them so adversely. In earlier days the primary resource in moments of leisure was found in such gardening papers and books as were obtainable, though those were necessarily few and, owing to price, not readily obtainable. But now that we have literally a flood of cheap gardening literature, and papers that have greatly reduced their prices, have vastly increased in interest and attractiveness, others have sprung into existence also, and books are wonderfully plentiful. We find these great advantages discounted by the much greater abundance of competing literature devoted to sport and pastimes, to fiction, and to many other worthless things, all distracting attention from the literary aspects of gardening, and destroying interest in them. Even in connection with gardeners' mutual improvement associations it is said that the membership is largely made up of the older rather than of the younger men. These societies cannot possibly displace literature, but they can do much to increase gardening knowledge, if young men would utilise them. But they are too often as rigidly cut, as one gardener said of a paper sent from the house to the booby, that its pages remained uncut. Happily, now, few need the cutting. A.

CORTADERIA JUBATA.—In his latest list of plants, Mr. Luther Burbank, of Santa Rosa, California, announces as a new discovery *Gynierium jubatum*, and offers plants of the same. His offer of this species of Pampas-grass naturally struck with surprise those who know that *Gynierium jubatum* or *Cortaderia jubata*, as it is now called by the Kew authorities, is a plant that is fairly well known to cultivators on this side of the Atlantic. It is one of the most ornamental of the Pampas-grasses, but is, unfortunately, rather tender, and succumbs to moderate frosts. Mr. Burbank says that his plant blooms two months earlier than other Pampas-grasses, and "may be expected to be much hardier than any of them." This was a little surprising to those who know *C. jubata*, and a correspondent communicated with Mr. Burbank on the subject. From the reply it appears that the plant offered by the "Wizard of Horticulture" is not the same as the one at present grown here by that name. From what Mr. Burbank says, it must be rather hardier, as it has withstood frosts which would have killed it here. By what name it should be called when it is introduced here is doubtful, but it will assuredly be a mistake to call two distinct *Cortaderias* by the same name. By the way, Mr. Burbank refuses to recognise the name of *Cortaderia*, and holds by that commonly used in gardens for many years, and approved of by several authors—viz., *Gynierium*. Considerations of euphony count for little in such matters, but if *Cortaderia* has the claim of priority, it has also that of possessing a more agreeable sound than *Gynierium*. S. Arnott.

UTILISING A TOMATO-HOUSE.—When a couple of years since, in the gardens of Castle Hill, Bletchingley, Surrey, the singularly beautiful residence of H. Partridge, Esq., a border for Vines fronting a viney was done away with, the wall arches built up, and the roots restricted to the inside border, a low lean-to range of houses was erected where the border had previously been, and divided into three divisions, have been used since largely for Cucumbers, Melons, and Tomatos. The gardener, Mr. J. Barks, keeps the Tomato-house constantly occupied, and gathers fruit from it from early in April continuously almost to the end of January. There finished recently the crop on numerous plants growing close to each other in 11-inch pots, and trained up under the roof. The varieties were Winter Beauty, which was the earliest to ripen fruit,

being ready on April 1; and Frogmore Selected, and both have given heavy crops. The plants were rather leggy, and each was carried along horizontally to the nearest wire, then trained upwards. That reduced the length of each stem some 14 inches. A second lot of plants already 20 inches in height, was being got ready to succeed the present ones, and that was Best-of-All, that seems to be specially a good summer variety. These come out in October, and are at once followed by other plants, also large, of Frogmore Selected, and then the process of renewal is repeated in February. The capital turfy loam found in the locality seems to be peculiarly adapted to the needs of the Tomato. It would be particularly interesting were an exact record kept of the weight of fruit taken from a small house of this description, as in that way with the expenses account balanced, it might be possible to learn how far Tomato-culture, practically all the year round, paid the cultivator. Certainly the culture given at Castle Hill reflects on the gardener the highest credit. D.

THE FLORAL COMMITTEE AND ITS WORK.—I am grateful to you for your reference to the alpine *Auricula* Tillie I exhibited before the Floral Committee on the 20th ult. That the Floral Committee should have passed it was, I should think, owing to lack of knowledge of the properties of a really good alpine *Auricula*. The two members of the Committee who could best appreciate the flower—Messrs. Douglas and Turner—were unfortunately absent, or the result might have been different. Both Mr. James Douglas, who is the leading raiser of alpine *Auriculas* in the south, and Mr. J.W. Bentley, who is now the most successful raiser in the north (who was at the Drill Hall with his Tulips), expressed great surprise that such a very fine variety did not receive an award. The variety had all the good qualities of an alpine *Auricula*—the pip large, stout, symmetrical, smooth on the edge, and without serrature; but above all, it possessed what is so difficult to get in a white centred alpine, a centre which opens white and remains unstained and vital to the last. Two or three of the pips had been expanded fully four weeks; indeed, its lasting properties are remarkable. There were seven fine expanded pips on a handsome truss, surmounting a stout, stiff flower-stem. My case is an illustration of the difficulty experienced by florists in getting their favourite flowers recognised by a hybrid committee on which the devotees of floriculture are only very sparsely represented. Given a lack of knowledge and experience, there can be no due appreciation, and injustice is done through neglect. What is wanted is, I think, in the case of popular florists' flowers, some devolution of sectional work. Experts in *Auriculas*, *Carnations*, *Dahlias*, and especially the *Cactus* varieties, *Chrysanthemums*, &c., should be told off as a sub-committee of selection to go round the hall, where there is ample material for comparison, and select what they think to be the very best, and recommend them to the full committee for awards. Take the cases of *Cactus Dahlias* and Japanese *Chrysanthemums* in particular; they are brought on to the table one after the other, the committee have no opportunity of comparing them with older varieties or with flowers of the same character from other raisers, and the selecting of varieties for awards becomes a haphazard business. I know that the Chairman of the Floral Committee, and some of the influential members of that body, are in favour of such a course; it was tried for two or three seasons with the best results, until one of the members got the method changed to the present confusing process. Further, the Council, in conjunction with the Chairman of the Floral Committee, might see to it that when certain flowers are in season, there is present a competent jury of experts, in order that every claimant to floricultural honours should have full justice done it. R. Dean.

GRAPE-JUDGING.—From your issue of May 17, p. 328, I observe Mr. Kirk, of Norwood, labouring to bring into unison the views of

others with his own on the subject of Grape-judging. In my opinion, he errs by confusing the mind with a multiple of properties for special valuation, which is also the principal defect in the Royal Horticultural Society's rules, for which Mr. Kirk finds no commendation. In judging a bunch of Grapes, Mr. Kirk begins with colour, for which he gives a possible 2 points; next, 2 points for finish and bloom; first-rate quality, $2\frac{1}{2}$ points; size and symmetry, $1\frac{1}{2}$ points; perfectly thinned bunch, with large-sized berries, $1\frac{1}{2}$ points. What could be more detrimental to the object in view than a proposal for the separate consideration of all these points? Most of them could be lumped under the one word "finish," which includes all the good points of a perfect bunch, viz., colour, bloom, symmetry, thinning, ripeness, &c.; and a bunch is not perfect unless it is large of its kind, both in bunch and berry. No doubt, in judging, all these points have to be noticed, in a way; but to isolate and deal with each separately would go beyond the limits of time and endurance to effect its accomplishment, and that judge is not capable who cannot at a glance recognise the cultural merits of a bunch of Grapes, and at once record value for them. Let us see how Mr. Kirk's method would work out in practice: Take two bunches, one small—weighing, say, a pound, and another of the same variety, weighing 3 pounds; the first is possessed of all the essential good properties mentioned, except size of bunch, which however is coupled with symmetry, in which it is also perfect, thereby entitling it to 1 point from the maximum of $1\frac{1}{2}$; the small bunch thus receiving full value, and omitting the points for size, would total 9 points. But to equalise the value of the properties, size, and symmetry, would reduce the total by $\frac{1}{2} = 8\frac{1}{2}$. Then the large bunch being perfect in all points, except symmetry and size of berry, in which it is slightly deficient, suffers a loss of $\frac{1}{2}$ a point for each, total $8\frac{1}{2}$ points. I fear this result would not prove satisfactory. To make it feasible, Mr. Kirk must make his table more elastic, in order to provide for extra merit or demerit being estimated and recorded even for one bunch of Grapes. Why are so many dissatisfied with the rules laid down and the standards provided by the Royal Horticultural Society? I presume one of the obstacles opposed to the practical utility of the code is the multiplicity or complexity of attributes named in each kind of exhibit for separate adjudication. It is evident one would require the memory of a Milton to remember all the different standards, or he would require to proceed with a copy in one hand and a schedule in the other, for the proper administration of the rules—a proceeding which would not add to the dignity of the office of adjudicator. What is needed is a simple uniform method, easily remembered, and applied to all kinds and conditions of exhibits. The cultural merits of any subject are not difficult to gauge and value, but opinions are not easily reconciled in regard to natural merits, which Mr. Kirk just referred to by the mention of Muscat of Alexandria Grapes, and which might form a subject of interest for future discussion. I agree with Mr. Kirk that all important class contests should be settled by pointing, and the results of adjudication shown. I do not mean, however, that every exhibit should be dealt with in this way, but simply the collections, and when the exhibits are found to be of almost equal value. W. W., N. E.

BRICKS IN THE NEW HORTICULTURAL HALL.—It has recently been announced that a sum of about £13,000 has been promised towards the erection of the new Horticultural Hall. Probably fully three times that amount will be needed; but this large sum has been promised so far by twenty-six firms or persons only. Putting the cost of each brick in the building at 10s., here are 26,000 bricks paid for; but some 70,000 to 80,000 will be needed. There ought yet to be tapped, out of the several thousands of Fellows of the Royal

Horticultural Society, a very large number willing to pay for from one brick up to ten bricks. In that way, aided by a few others giving up to 100 bricks, it should not be difficult to raise the needful sum to enable the Hall to be well and substantially built. It should be the desire of thousands to own one or more bricks in the Hall; and if the horticultural world in general, and the Fellows of the Royal Horticultural Society in particular, be appealed to in that way, the result might be remarkable. With so munificent a start, there should be no difficulty in securing an early successful issue. A. D.

RHODODENDRON NUTTALLI.—I herewith send you one truss with six blooms of this rare Rhododendron, which we have here growing in a large three-quarter-span Camellia-house. There are five trusses on the plant this season, some having four and some five blooms. The bloom measures 5 inches in diameter, and 4 inches deep, and has a rich perfume. The colour when opening is pale primrose, changing when a day old to pure white. One of the trusses measured 12 ins. across. The leaves are dark green, 10 inches long by $4\frac{1}{2}$ inches across. John Wilson, Dupplin Gdns., Perth, N.B.

A GOOD CROP OF ROSES.—I have in a span-roofed glass-house, measuring 9 feet by 7 feet, and 6 feet long rafters, and on each side there are two climbing Niphetos Rose-trees, from which I have cut twenty dozen of blooms, in every instance fit for sale. H. Wickham, Wilton Cottage, Reigate.

CLIMBING FRENCH BEANS.—I would like to corroborate what "J. S." has said as to the usefulness of the climbing French Beans for forcing, and I consider them superior in quality even to the best of the dwarf varieties, first-rate though they be. Having a portion of the vinery roof not yet covered by young Vines I am taking up, I planted a row of the climbing Tender-and-True in the back of the vinery border, from where we are now gathering quantities of delicious pods, and I send you herewith a few of them for your opinion, with also a few of the Ne-Plus-Ultra, a dwarf Bean of no mean merit, but venture to say you will think the Tender-and-True the better. Of course I am aware one has not always the space necessary to force the climbing variety, but I do not think it is generally known that they force so well. F. W. C., Poles Gardens, Ware, Herts, May 27. [Both samples were of good quality; but whilst the pods of Tender-and-True were remarkably tender, we considered those of Ne-Plus-Ultra possessed most flavour. Ed.]

COUCH GRASS.—You have given your correspondent Pan-Adam (see *Gardeners' Chronicle*, p. 331), a laborious task in advising him to trench his land 2 feet deep or more to get rid of Couch grass. About 1 acre of orchard ground here was overrun with this weed, also Mare's Tail, Docks, Nettles, and Woodbine, the latter running up the stems of the Apple and Pear-trees, besides half smothering some old Currant bushes. Instead of trenching and picking them out, I planted Rhubarb in the worst places, sufficiently close to surround the stems of the trees, but the Currant trees were destroyed as soon as others were raised to take their place, and Rhubarb was planted. The Rhubarb was lifted the third year for forcing, and fresh plantations made each spring, so we have always two or three batches going. The crops that follow the Rhubarb are Jerusalem Artichokes, Scotch Kale, Winter Greens, and Potatoes, where open spaces admit of it. I have destroyed the weeds profitably, and in a way that no other known method would have done so effectually, and I would strongly advise Pan-Adam to give my plan a trial. I think the Mare's Tail a most determined grower, and when once it gets a hold on the land or of gravel walks, it defies every means for its destruction. When present in gravel walks, I assume that the roots were present in the soil when these were made; at any rate, weed-killers have been

applied which destroys the tops, but after a year or two it comes up as vigorously as ever. W. P. Roberts, Cuerden Hall Gardens, Preston. [Not every gardener wants large quantities of Rhubarb, or to crop his orchard with Kale, &c. Ed.]

LILIAM GIGANTEUM.—I would like to make a few remarks as to this plant in the garden here. The natural soil in which they thrive so well consists of light sandy peat of a depth of 1 foot, with pure sand of great depth below it. They grow under trees, and get the benefit of the sun's rays until about 11 o'clock A.M., and scarcely any direct sunshine in the afternoon. It may be of interest to a great many of your readers to know that the bulbs of this species, after flowering, are completely exhausted, that they disappear in course of time, and never flower again, leaving two or three offsets, which flower from four to six years afterwards. We have at present here some thousands of bulbs, which make a grand display at the end of the month of June and in July. The flower-shafts are from 10 to 14 feet in height, stout, and needing no staking. These carry about twenty flowers each. These flower-shafts are the produce of bulbs which are so crowded as to force themselves out of the soil, and receive no protection whatever in winter beyond the fallen leaves, which are insufficient to cover any of the large clumps; and yet frosts of several degrees below 0° have never caused the slightest injury to one of them, which fact proves their hardiness. Rabbits, hares, pheasants, or pea-fowl will not interfere with the bulbs. The seed is gathered about the end of October, and sown the following March, and it takes a period of twelve months to germinate the bulbs, and from eight to ten years to flower. H. Gandy, gr., Merton Hall, Walton, Norfolk.

FRUIT-TREES BY ROADSIDES.—In reading the *Gardeners' Chronicle* of March 1, p. 140, there is an article by Mr. Burbidge, stating that 500,000 fruit-trees have been planted along the roadsides in France, and annually additions to this number are being made. How nice it would have been had Mr. Burbidge stated the localities in France where this planting has been carried out; so many people of the English-speaking race now travel much about France, and I dare say some might like to visit the parts, and see for themselves the success of this planting, and judge how such an undertaking could be carried out in England and elsewhere. An eminent writer on horticulture, touring Germany on foot, coming upon some roadside fruit-trees covered with ripe fruit, was tempted to pull a few. Presently a tall, gaunt peasant approached him, and insisted he should accompany him to the police-station, and he only escaped being locked up by paying a handsome ransom. I need not add, my friend picked no more roadside fruit in Germany. When in the Basses Pyrenees, I have seen fruit-trees planted on the embankments of the railways, and was told they were under the protection of the station-masters of the different stations. I have often wondered that many of our railway embankments have not been used for fruit-growing. Mr. T. G. Rooper, on p. 137, makes reference to gardens connected with schools on the Continent. Not having seen any such gardens, it would have been convenient on Mr. Rooper's part had he mentioned the townships where such gardens could be seen. In Massachusetts, U.S.A., occasionally gardens connected with schools are to be met with, but they are so primitive, that I was always reminded of my boyish days in Glasgow, making my first attempt in landscape gardening in a flower-box 30 by 9 ins. in my bedroom window. I have no doubt school gardens in England will take a form and development worthy of the nation. About the time the School Board was instituted to give an all-round training, the late Mr. Shirley Hibberd and I, by way of a change from making a study of Daffodils, had a long conversation on the probable outcome of the new departure in education, and came to the conclusion that unless hampered by those

opposed to the education of the masses, though late, in making an effort to educate our people, we should develop, and stand in time an example to other nations worthy of imitation. Some fifty years back there was a movement for an educational system in England, but it was so violently opposed from the pulpit that the movement dropped. I heard one eminent preacher in the midland counties devote a whole evening to denouncing a State-paid system of education, pointing out from ancient history that the end would be the suborning of the people to the State. Had he lived now he would have found the reverse. Peter Barr, V.M.H., Cape Town.

WILD TULIPS.—With reference to the remarks in the *Gardeners' Chronicle*, p. 300, regarding *Tulipa sylvestris* being wild so far north as Northumberland, I may be allowed to say it has for a very long period been recognised as a wild plant in East Lothian. In the grounds of Belton House, near Dunbar, I saw it flowering more than twenty years ago, and at Tynningham it has been a weed in the "wilderness" as long as the memory of the oldest inhabitant can go. It is there growing in somewhat poor soil, among large timber, and the plant never gains strength to flower, though by means of its stolons it annually encroaches on fresh ground. I have little doubt if fed by means of surface dressings that flowering bulbs would be produced. There is another colony in a small plantation by the side of a river, in soil rather inclined to clay, where in some years flowers are produced profusely. The present year they are all but a failure, no doubt largely on account of what the Dutch growers term "firing," the result of early and keen frosts. Several years ago, I procured a lot of the continental form (*T. florentina*), but it proved in every particular identical with our own, with the regrettable exception that instead of increasing, it has almost entirely died out. I should not be surprised that this Tulip may be in other habitats and not recognised as such. Its appearance in the wilderness is by no means suggestive of a Tulip, and a Dutch grower to whom I showed it some years ago was doubtful of its identity; but the bulb and its stolons afford fairly good means of identification, though the diminutive "blade" that forms the leaf lends but little aid in that respect. It is noteworthy that this species is never eaten by pheasants or rats, while we lose thousands of garden Tulips in some years by their depredations. Some years the latter are not touched by either; in others they afford food to both during many months. R. P. Brotherton. [The wild Tulip used to grow in Christchurch meadows, Oxford; but, so far as we know, it never produced flowers. Ed.]

THE TEMPLE SHOW.—I could not help remarking at the Temple Show the overcrowding of many of the exhibits with a large number of plants of the same kind, and those usually plants in which the visitors, at least those who know much about plants, take very little interest. It is quite possible that in the dense crowd of visitors, as well as plants, I overlooked some really interesting novelties, but I saw very few, except in Sir Trevor Lawrence's charming group. Last year I brought up four plants, three of which were old plants, but which I thought among the most beautiful I had in flower, and they were the only ones of their species in the exhibition. To-day I have looked round my garden and houses, and find at least twenty in flower of what I should consider, on account of their beauty and interest, most worthy of being exhibited, and not one of them was, as far as I saw, represented at the Temple Show. I would suggest that the Council reserve a sufficient space next year for rare, curious, and interesting plants, and invite the lovers of such to exhibit small choice groups of plants not generally grown. H. J. Elwes Colesborne.

LILIAM CANDIDUM.—I am trying the value of a thick dressing of pure sand about these plants, to see if it will afford any protection

against the disease to which the plant is prone. The mulch will be rather more than an inch deep, and extend, in the case of large clumps, to a distance of 2 feet from the stems. As a further precaution, some sand will be thrown into the clumps so as to cover the soil. My object in doing this so early is to note any modification of the attack that may present itself, and to ascertain if the disease is communicated by the air wholly or in part. Any spores of fungus in the soil awaiting the activity that warm showers will induce, would have little chance when covered up by the more or less inert sand. Still, such disease-germs may exist on the radical leaves, now a mass of shining green at the base. In these circumstances some patches of autumn-planted bulbs that are destitute the radical growth, may afford the best opportunity for the sand test. If a few gardeners would try the sand on some clumps, and leave others undressed, some useful hints might be gleaned; and anything that can be done to save this Lily to our gardens should be undertaken. *E. Jenkins, Hampton Hill.*

THE LATE MR. WILLIAM BULL.—The death of Mr. William Bull, on Sunday last, has removed another of the few remaining survivors of the executive committee of the International Horticultural Exhibition held at South Kensington in 1886. Mr. Vernon Heath's photograph of the executive committee (including myself as assistant secretary) contains twenty-one individuals; the two absentees were Mr. John Jackson Blandy, the vice-chairman; and Mr. John Fleming, of Cliveden, both long since dead. Mr. Blandy died in the September following the holding of the exhibition in May; Mr. Fleming in December, 1883. Only six remain—Sir Daniel Cooper, Bart., treasurer; Mr. William Paul, Dr. Masters, Mr. H. J. Veitch, Mr. Edward Easton (who is, I think, still an active member of the London Council), and myself. The exhibition was so thoroughly unique in its way, so extensive, and so comprehensively international, so remarkable for its Conference meetings and its social amenities; it was so certainly the one great representative horticultural exhibition of the latter half of the nineteenth century, that it is fitting, as the men who carried it out have the cords of their life loosened, and are drawn away from us through the gates of death, should have a record of association with this great undertaking. *R. Dean, V.M.H.*

SCOTLAND.

THE WEATHER IN ABERDEENSHIRE.

The month of May just closed at time of writing, says an Aberdeenshire correspondent, has been, from a meteorological point of view, one of the worst experienced during the last quarter of a century. A change for the better did take place upon Thursday, the 22nd of the month, but even yet the wind during some nights has been cold and searching. The dryness of the surface of the land is evidenced by the great clouds of dust that are being blown about by the drying winds. The result is that seedling plants have been greatly injured, and in many instances killed; while in some districts the haulm of the young Potatoes has been blackened. The effects of the bleak weather, however, are perhaps more apparent on the Hawthorn-hedges. There is little or no blossom, and this fact is all the more instructive when it is remembered that the Hawthorn is not easily affected by cold weather. Much havoc has been wrought in our gardens, particularly among the fruit-bushes, the ones that have fared worst being the Currant and Gooseberry. It is devoutly hoped by all concerned that better weather will be vouchsafed us during the next two months, otherwise we shall not be assured of even fair crops. The Westburn Park, recently

acquired by the Corporation of Aberdeen, has been closed for a month to permit of the grass growing undisturbed, but although it is now looking very well, the cold wintry weather lately experienced has considerably retarded vegetation.

PARIS.

The spring exhibition of the National Horticultural Society of France opened on the 21st ult., in the Cours la Reine, Champs Elysées. The weather was cold and rainy. The exhibition was well filled, but there were few novelties. We may specially mention the fine collections of Orchids from MM. Lesueur, Dallemagne, Duval, Megne, Regnier, Beranek, Maron, Balme, and Maillet. The stove plants of Messrs. Truffaut, Chantrier, Chantin, Maillet, Count de Portalis and the Luxembourg garden (gr., M. Opaix), were worthy of notice. M. Truffaut of Versailles showed Palms and other ornamental plants very well cultivated, as well as some interesting novelties. *Asparagus Duchesnei*, *Hemantus Diadema*, and *H. fascinator* introduced by M. Linden from the Congo, together with some fine Orchids, including a fine *Odontoglossum* near to *O. triumphans* and *O. Adriance*.

Among the Orchid novelties were *Laelia Hebe*, shown by M. Maron of Brunoy. It is stated to be a cross between *L. tenebrosa*, and *L. Digbyana*. It has the sepals and petals of the first parent and the lip of the second, with very numerous rose-coloured lines radiating from the disc [A similar plant was shown at the Temple.—Ed.]

Laelio-Cattleya Mossiae × *grandis* was exhibited by M. Dallemagne, of Rambouillet. It has pale nankeen-yellow sepals and petals, and a clear rose-coloured lip.

Cypripedium Jeannette, shown by M. Beranek, and a cross between *C. Youngianum* and *C. bellatulum*; *Cattleya Jussieu*, from M. Maron, a cross between *C. Schroderae* and *C. Lawrenceana*; *Cattleya Milton*, from M. Maron, a cross between *C. Mossiae* and *C. Lawrenceana*, were all worthy of notice.

The fine specimens of *Begonia cristata*, B. Vallerandi, B. crispa, B. picta marmorata, and the single *Begonias* with enormous flowers, shown by M. Arthur Billard, of Le Vesinet; the varied *Begonias* of M. Vallerand, among which B. marmorata var. Le Papillon; the *Gloxinias*, the *Anthurium Scherzerianum* with enormous spathes, from M. Duval of Versailles; the magnificent specimens of *Pelargoniums* of M. Nonin, the group of perennial plants of MM. Vilmorin, the *Phyllocactus* of M. Simon, the *Roses* of M. Lévêque, M. Rothberg, and M. Chantin; of M. Honoré Defresne, of M. Georges Boucher, of M. Jupeau; the Maples and dwarf *Thuyas* from Messrs. Yamanaka & Co., of Yokohama; the superb collection of *Adiantum* from M. Ramelet, the pretty *Begonia Rex* × *decora*, &c., were all remarkable in their way.

M. Sallier, of Neuilly, exhibited a fine group of *Eremurus*, *Anthurium*, *Aglaonema*, *Pothos*, and other ornamental plants, with Orchids, among which were *Vanilla planifolia*, with several pods; *Phyllocactus*, *Stenogastera cinnam*, &c.

The colonial section attracted much attention. The *Jardin Coloniale de Negent* (Director, M. Dylowski) exhibited plants of *Arenga saccharifera*, and Coffee in fruit; MM. Vilmorin, Andrieux and Co. showed a collection of economic plants, small, but well arranged with oleaginous, textile, alimentary, and other groups, according to their use. *G. T. G.*

FLORISTS' FLOWERS.

FANCY PANSIES AT THE TEMPLE SHOW.

A COLLECTION of cut blooms of Pansies showing singularly fine quality, was staged by Messrs. Dobbie & Co., Rothesay, who cultivate on a large scale both show and fancy Pansies, and also Violas. No show Pansies were included in the collection. The fancy Pansy has now been in general cultivation for some forty years. It was about 1860 that the late M. Mieliez, of Lille, sent over to Messrs. E. G. Henderson & Son, then of the Wellington Road Nursery, St. John's Wood, the fine and distinct fancy Pansies he had raised; and the St. John's Wood firm, regarding them as subjects too precious to hazard their cultivation among London smoke and fogs, sent them to my brother William, then in business at Shipley, Yorkshire, to grow for them, and in that moist, cool district they flourished, they were seeded, and in this way the improvement of the modern form of the flower commenced. But long before this, when the late Mr. John Salter was residing at Shepherd's Bush, and cultivating and exhibiting as an amateur, striped and blotched Pansies, as distinct from the yellow grounds, white grounds and selfs of the florist, were his hobby; he took them to Versailles with him when he went there in 1843 to set up in business, and while there he raised, named, and distributed named varieties, and it is possible some of Mr. Salter's productions fell into the hands of M. Mieliez, and became the progenitors of those he sent to London some years later. The late Mr. John Downie also took the section in hand, and one of the most famous of his productions was a variety named Dandie Dimont.

In size, in substance, and in beauty of marking, the Rothesay Fancy Pansies seem to have almost reached the limits of perfection, only that we cannot set bounds to the possibilities of development in flowers. Chief among them were:—

Jeanie R. Kerr.—Yellow, edged with white, with blotches of brown-violet, extra fine.

Jeanie B. Smith.—A very fine pure white self, with large dark blotches.

John Myles.—Belted with crimson, and edged with rosy-white, the stout upper petals crimson; a bold and striking flower.

Mary Travis.—Creamy-white, the upper petals purple and white, with bright crimson centre blotches.

Mavourneen.—Lemon, magenta, and purple; a very striking combination, large and bold.

Miss Albinia Brown Douglas.—A very large and perfectly-formed flower, dense black, reddish-crimson, white and magenta; one of the finest.

Mr. Charles Stirling.—A fine deep yellow self, with clear cut, circular, black blotches.

Mr. B. Wellbourne.—Primrose, laced with dark, large, brown-black blotches.

Robert C. Allan.—A combination of crimson and white, very handsomely blotched, large and stout.

Robert White.—Bright yellow, with glossy black blotches; a very fine and striking flower, regarded as the best yellow in cultivation.

Tom Watters.—This very fine variety has a combination of brilliant tints difficult to describe; a high class flower of great beauty.

Wm. H. Clarke.—Black, laced with yellow, and tinted with heliotrope.

William Maxwell.—White, rose, and black-blue; a very fine flower.

W. P. A. Smyth.—Bluish-purple, yellow, pink, and bright purple; extra fine.

The foregoing fourteen varieties constitute a first-class collection. *R. D.*

Obituary.

WILLIAM BULL.—We greatly regret to have to announce the death of Mr. Wm. Bull, the well-known nurseryman, and new and rare plant merchant, of King's Road, Chelsea, which took place at his residence on Sunday, June 1, after three days' illness, his age being seventy-four years. Few men in the world of horticulture have been better known or more widely respected than William Bull, to whose enterprise and perseverance our gardens

to the number of about seventy-five, being at the same time announced. The list is one of which any nurseryman might well be proud, and most of the things are still garden favourites, and some yet rare after more than forty years. The first plant enumerated, *Aërides affine niveum*, a pure white form, is not now in cultivation. If it could be found it would command a very high price. *Lycaste Skinneri alba*, *Trichopilia crispa*, and other still rare plants were enumerated, and also a fine representative list of novelties

see that a really fine and distinct plant is in no danger of getting into disrepute by age or by being superseded by later introductions, as witness *Laelia anceps alba*, of his early importation, which is still prized as the best of its class; *Laelia præstans alba*, and other of his introductions.

In pursuit of novelty in Orchids and new plants, Mr. Bull about 1880 sent out Messrs. Shuttleworth and Carder to Colombia, and their efforts were satisfactory; and continually, when any new venture suggested itself to him, he acted on it, and for some time past he had been turning his attention to Orchid-hybridising.

Mr. Bull was always a hard worker; early and late he was to be found at his business, and no detail in it escaped his personal supervision. But despite his precision in all matters relating to business, and the consequent strictness he had to exercise with his employes, he was a just and good master; and once a man proved himself worthy of a post of trust, he could remain in it as long as he wished.

Mr. Bull's energy and his interest in new plants were unbounded. Many of them were described and figured for the first time in these columns. Many a time also in former years has the Editor been summoned by telegraph at an early hour in the morning to come and see some novelty "on your way to town," and never was he disappointed. On another occasion we remember Mr. Bull bringing to this office some Aroid whose perfume was as vile as its interest was great. So careful was he of the plant, that he carried it in his brougham till the stench became so great that he was obliged to get out and sit with the driver in the open air, and thus brought the treasure to the editorial sanctum.

His business relations earned him a world-wide reputation. He was a F.L.S., F.R.G.S., F.Z.S., M.A.I., F.R.B.S., and of other societies, both British and foreign; but among all his honours, the one which he most prized was the Victoria Medal of Honour, presented to him by the Council of the Royal Horticultural Society. He was altogether a most remarkable man, and his death will cause deep regret among a large circle of friends and correspondents.

JOHN W. MILLER.—We have to record with much regret the death of a very old correspondent to this journal. Mr. John Miller, who retired from the charge of Lord Foley's garden at Ruxley Lodge, Esher, only a year ago, was eighty years of age, and had been head gardener to different noblemen and gentlemen for a period of fifty-two years. His first charge was at Earditon, Sir William Smith's garden, in Worcestershire, in 1849, and subsequently he exhibited varieties of Oranges, Lemons, and Shaddocks, at meetings of the Royal Horticultural Society in Regent Street, and Peaches and Nectarines at the Royal Botanic Society's exhibitions in Regent's Park, winning his first Silver Medal in 1853.

After remaining at Earditon for fifteen years, Mr. Miller was gardener at Astle Hall, in Cheshire, for two years, then spent another year in the nurseries of Messrs. Jas. Veitch & Sons, Chelsea, and Messrs. Dickson, Chester. He then entered the service of Lord Foley at Workop Manor, Notts, in 1861. From this garden Mr. Miller exhibited very frequently, and with much success. Upon the death of the late Lord Foley several changes took place at Workop Manor, and for some time Mr. Miller had charge of Clumber Gardens as well as those at Workop Manor, both places belonging to the trustees of the late Duke of



THE LATE WILLIAM BULL, V.M.H., F.L.S., &c.

are indebted for the introduction of many interesting plants, especially warm-house plants of decorative character. Settling down to the horticultural trade early in life, he became traveller for the then important firms of Rollisson & Sons, and Messrs. E. G. Henderson, and "on the road" he had the reputation of being the smartest traveller in the trade.

On turning to the *Gardeners' Chronicle* for March 16, 1861, we find the announcement that Mr. William Bull, F.R.B.S., &c., had taken over the premises and nursery stock of Messrs. John Weeks & Co., in the King's Road, Chelsea, and that he had there started his establishment for new and rare plants, a list of which,

generally, many of which secured Awards at the Royal Horticultural Society, for even in the first month of his new venture, Mr. Bull was a successful exhibitor, and our reports of the shows from that time supply distinct evidence of his success in obtaining desirable plants.

Ornamental plants and warm-house flowering plants and Orchids were the main objects of his business, but no matter what the subjects were that were in fashion he went zealously into their introduction, as he did about 1864-65, with the many forms of *Aucuba*.

Orchids were his favourites always, and of them he had a good knowledge, both commercial and cultural. Thinking over some of the best of his introductions, it is pleasant to

Newcastle. He effected many alterations in the pleasure-grounds, under the direction of the late Mr. Hope, of The Deepdene, near Dorking, and blew up many large tree-roots with dynamite. This was witnessed by the late Mr. W. E. Gladstone and other trustees, also the lifting and planting of large old Yews to form shelters, upon the system adopted by Barron & Son, Elvaston. Large trees were planted as late as the middle of July, and not one specimen died. Whilst at Clumber, Mr. Miller raised a new Melon, which he named after William Tillery, then gardener at Welbeck. It remained one of the most popular Melons for many years, and has been used as a parent in the raising of some of the green-fleshed varieties of the present day.

Mr. Miller left the Duke of Newcastle's employ in 1882, and carried away with him a flattering testimonial from Mr. Gladstone, written at 10, Downing Street, on March 24 of that year.

After spending a year with Mr. Hargreaves in Hampshire, Mr. Miller was asked to again serve the Foley family at Ruxley Lodge, which Lady Foley had bought after Lord Foley's death at Workshop. Whilst at Ruxley, Mr. Miller was awarded twenty-four Medals by the Royal Horticultural Society.

Deceased's brother, Mr. William Miller, of Berkswell, near Coventry, is well known to readers of these pages. Mr. Miller leaves a widow seventy-six years of age, also five sons and one daughter. The eldest son is gardener to Lord Bentinck, at Underley Hall, Westmoreland, and two others are head gardeners in New Zealand; a fourth son is with Messrs. Carter, Page & Co., seedsmen; and another is goods agent at Leicester under the Great Central Railway Company. The only daughter is the wife of Mr. John Pentland, gardener and bailiff at Ashwicke Hall, Glos.

Deceased did not retire from active work until the remarkable health he enjoyed so long was impaired. During the greater part of the last year, at East Moulsey, Surrey, he has been confined to his room.

Belonging to the old school of gardeners, and possessing remarkable energy, enthusiasm, and industry himself, he could excuse anything in others more easily than indifference to duty. P.

CHARLES DOWNIE.—Mr. Chas. Downie, for some few years in the grass-seed department of Henderson & Co., of New York City, died on May 20, 1902, aged thirty-seven years, after a brief illness.

Mr. Downie was born, as we learn from the *Florists' Exchange*, in Nova Scotia, of Scotch parents, his father being a Presbyterian clergyman. While very young, his parents removed to Jamaica, West Indies, and there his early boyhood years were passed. They returned to Scotland, and when about eighteen years old, young Downie entered the employment of Downie & Laird at the Edinburgh nurseries, John Downie being his uncle. After the usual course in nursery and shop, he was sent out "on the road" to represent the firm, and travelled over Great Britain for several years in that capacity.

In 1889 he came to the United States and found employment with Peter Henderson & Co. as a general seed clerk. Shortly afterwards there was a vacancy in the department of agricultural seeds, and he was selected to fill it. His aptness, coupled with unusual physical and mental energy, made him an excellent pupil, and he very soon mastered the details of that department.

He was a fine specimen of physical manhood, standing 6 feet 2 inches, well built, and

apparently looked good for a long and useful life. His temperament was enthusiastic; he was very social and engaging in his manners. His was a very even disposition; a voluble and interesting talker, he made friends rapidly; he kept them as well. He was sunny and kind; his environment was always pleasant, and he will be sadly missed and long remembered by those who associated with him daily, as well as by a large number of friends throughout the country. He leaves a widow and one son, a boy about fourteen years of age.

CHARLES J. GRAHAME.—We greatly regret to have to record the death of this gentleman at Surbiton on the 26th ult. He was a member of the Stock Exchange, but took great interest in horticultural matters, especially in Roses, of which he was an enthusiastic admirer. For a time he acted as assistant secretary of the Royal Horticultural Society, where great things were hoped for from his energy and the freshness and originality of his ideas. He remained in office, however, too short a time to influence the fortunes of the society. In the National Rose Society, of which he was a Vice-President, he instituted reforms which have proved very beneficial, though they were greatly objected to by some at the time. His great aim was to popularise the society by affording greater inducements to the amateurs and smaller growers, and by removing the disabilities which weighed so heavily against them in competing with large growers. Mr. Grahame himself began as an amateur on a small scale at Croydon, but on removal to Leatherhead, where he had more space at disposal, he threw himself into exhibiting with his usual energy, and was as or more successful on a large scale than he had been when his opportunities were more limited.

H. H. HUNNEWELL.—Our correspondent Prof. Sargent writes:—"Our good old friend Mr. Hunnewell died on the 20th ult., in his ninety-third year. So many Englishmen have seen his garden, that the fact that he is dead will interest and grieve many of your readers. He has been the most liberal and intelligent patron of horticulture we have had in this country, and in various ways has done a great deal to facilitate the study of botany."

British horticulturists have been made familiar with the magnificent garden which this gentleman had laid out at Wellesley, Mass., by means of illustrations which from time to time have appeared in the *Gardeners' Chronicle* (see issues for March 30, 1889, and November 25, 1893).

Mr. Hunnewell was born in Massachusetts, of British family, coming from the neighbourhood of Croydon. His estate at Wellesley was famous, as he had the finest and most magnificent collections of Conifers and Rhododendrons to be seen anywhere in America. He lived among his trees as though they were a part of his very being. Mr. H. H. Hunnewell and his old gardener, Mr. Harris, who retired very recently because the burden of years was too heavy upon him, were companions rather than master and servant.

He had been a member of the Massachusetts Horticultural Society for fifty years, and his many public services, as well as his scholarly proclivities, were recognised by Harvard University, which conferred on him the honorary degree of M.A. His father and his two sons were also members of the University. A photograph of Mr. Hunnewell was given in the issue of the *Gardeners' Chronicle* for July 13, 1901, p. 23.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

MAY 20.—*Present:* Dr. M. C. Cooke (in the chair); Messrs. Hooper, Worsdell, Saunders, Shea, Bowles, Douglas, Worsley, Gordon, Elwes, Chapman, Holmes; Prof. Boulger, Rev. W. Wilks, and Rev. G. Henslow (hon. sec.) Visitor, Prof. Perceval, S.E. Agric. College, Wye.

Beech and Rose diseased.—Mr. Saunders reported as follows upon the specimens sent to the last meeting: "As to the scale insects from Mr. Gregory. They are *Cryptococcus fagi*. The scale on the Rose is probably *Aspidiotus ostreaeformis*—I say probably, because there is another species so closely resembling it that without boiling the little insect from under the scale in liquor potassæ, staining, and otherwise preparing it for examination under the microscope, so that certain parts of its anatomy can be clearly seen, it is impossible to be quite certain. The *Aspidiotus* and *Cryptococcus*, though both belonging to the same family, the Coccidae, are very different insects, the former being a true scale insect, the other being nearly allied to the mealy bugs. I should recommend that all the shoots of the Rose that are attacked should be cut off and burnt, and the rest dressed or sprayed with paraffin emulsion. The Beech bark should be scrubbed with the same preparation, or with $\frac{3}{4}$ lb. of soft soap dissolved in a gallon of water. It is better to boil the soft soap in a quart of water before adding it to rest of the water."

Melon leaves decayed.—Mr. PURNELL PURNELL brought Melon leaves, and wished to know what the disease was they were suffering from, and whether he should pull the plants up and burn them. He also said it was spreading rapidly, and he was afraid it might extend to other plants in the same house, as well as to his Cucumbers. Dr. COOKE reported upon them as follows:—"I have examined carefully the Melon leaves sent me. They are certainly not affected with the new Melon disease, nor can I find any trace of mycelium in the tissues, or the least evidence of fungus attack. I am of opinion that the mishap is due to some external cause, like a sudden chill, and that there is nothing to be found which is capable of infecting other plants. In so far as the leaves sent to me are concerned, I find no evidence of internal disease, and cannot recommend the destruction of the plants; only their complete isolation may be prudent, so as to prevent communication with other Melon or Cucumber frames. Close attention may reveal the cause, but I cannot see why it should spread so rapidly. As a precaution I should pick off and burn diseased leaves; but, if it is really a disease of internal origin, although it does not at all resemble the bacteriosis of Cucurbits, the microscope fails to detect any mycelium or spores in the tissues, which confirms me that it is not an organic disease. I shall be interested to know if any discovery is made from external surroundings, but as these are unknown to me, I cannot offer any suggestions."

Potato tuber disease (Fusarium solani, Mart.).—Dr. COOKE also contributed the following: "A circumstance has occurred within the past few days which convinces me that we have a disease to contend with in stored Potatoes which has not hitherto been estimated at its true importance. Not long since, some tubers were sent to the Committee, which, when cut, showed black blotches, and at the time I was inclined to think they might be caused by the ordinary Potato mildew running down the stems into the tubers; but the microscope failed to give satisfaction, and the inference remained in doubt. Since that time tubers have been sent, which, when cut, exhibited the same blackened blotches. In one instance this was supplemented by a great number of convex pinkish pustules on the outside of the tubers, mixed with tufts of white mould. These pustules were the external manifestations of a compact pink mould, which has long been known to develop itself upon Potato tubers, but the general impression has been that it was only a saprophyte, which flourished upon spots already decayed. Mr. WORTHINGTON SMITH intimated in 1881 that *Fusisporium solani*, as it was then called, was 'not peculiar to decaying Potatoes,' but was a veritable disease of stored Potatoes, and of this there can be no longer any doubt. The black internal blotches at length become permeated by mycelium, which produce the characteristic conidia wherever they reach the external air. The pustules are about the size of a split hemp seed, and sometimes larger, with a

tendency to form rings, or at least to grow in company, of a rather compact substance, of a pale pinkish colour, often mixed with tufts of white flaccid mould. The conidia are profuse, of a spindle shape, curved, and narrowed towards each end, divided transversely by three septa into four cells (40-60 by 7-8 μ). When mature they are apt to separate at the septa, and then the angular cells become rounded, and either germinate at once, or they may undergo a period of rest. It must be remembered that a very large number of conidia are produced on each pustule, and that each conidium germinates from each of the four cells, so that it possesses great powers of disseminating and reproducing the disease. Every such diseased tuber should be removed and destroyed at once, and if the disease appears amongst stored Potatoes, the application of some fungicide would be advisable so as to kill any scattered conidia. Probably some slight wound or bruise may be necessary for the mould to obtain entrance into sound Potatoes, but to be forewarned is to be forearmed."

Prof. PERCEVAL observed that the disease was infectious amongst stored Potatoes, so that care should be taken to remove any that were affected.

Lily disease.—Dr. COOKE reported as follows upon some diseased bulbs: "Bulbs and young shoots were sent to the last Committee for report of *Lilium candidum*. The two bulbs did not exhibit, either externally or internally, any trace of disease. The young shoot, about 6 inches long, at first appeared to be vigorous, but very soon all the young leaves began to turn brown and die at the tips, gradually passing downwards, until only the basal portion of the leaves remained green. No mycelium could be found within the tissues, and although the shoot has been kept in a moist atmosphere for a week, there has been no further development. I am inclined to suspect that, if any form of fungus disease is present, it is due to the parasite described by MARSHALL WARD ('Diseases of Plants,' p. 117); but there is no direct evidence to be found in the specimens sent for examination, and it is possible that the failure may be due to external circumstances and surroundings."

Turnip varieties.—Mr. GOULD, of Sleaford, wrote to say that there was no possibility of a mistake in the case of the "Red Tankard" Turnip described at the last meeting. He adds: "I am leaving all the plants to seed again, to see what the next generation will produce. We are also planting one Cabbage, one Carrot, and one Mangold, and will let you know the result in due course."

Raspberry canes and Pear leaves diseased.—Mr. GAUT, of the Yorkshire College, Leeds, sent some examples from various places in Yorkshire. They were referred to Dr. COOKE and Mr. SAUNDERS for examination and report.

Anthurium Scherzerianum.—Mr. CHAPMAN showed two spikes, one having two spathes, from a plant which has borne thirty-six spikes, all of which were double-spathed. The other specimen was a seedling from this plant, but single-spathed, with a pale, rose-coloured stripe along the midrib.

Stipa viridula, injurious to cattle.—The seeds of a species of *Stipa*, probably *S. viridula*, Trinius, were shown by Mr. E. M. HOLMES, and were stated to have caused considerable losses amongst cattle on the Canadian ranches. This particular species appears to possess some poisonous principle, which has not yet received a careful chemical examination. An account of its properties is given in the *British Medical Journal*, 1898, p. 1059. Haeckel states that *S. inebrians*, Hance, and *S. sibirica*, possess similar toxic properties. Other species, likewise fatal to cattle, owe their danger to the seeds. Those of *S. aristiglumis*, F. von Mueller, being said by Maiden to cause the death of numbers of cattle and sheep by becoming attached to the wool and working through the skin, causing in some fever, and often penetrating into the vitals. The chief danger of this kind arises in the autumn, when the grass is in fruit. Many of the species form excellent fodder for cattle at other times, such as *S. spartea* (Trinius), which constituted the winter food of the buffalo, and is now the delight of horses in the winter season. This species grows on the dry prairie; but *S. viridula* grows around badger-holes and throughout the prairie region westwards to the Pacific. In New Mexico, *S. viridula* is known as "Sleepy Grass."

Plants Exhibited.—Mr. H. J. ELWES, Colesborne, Cheltenham, brought the following: (1) *Eremurus*. "The leaves of this plant are damaged, as I believe, by long-continued cold, wet, frost, and hail; but Mr. Hood (Vaucluse) thought it was a fungus which caused the decay, and advised the cutting off the leaves to prevent

its spreading; but I cannot find after ten days that there is any confirmation of this." Dr. COOKE thought that Mr. ELWES' view was correct, and that if any fungus was present, it had followed on the previous decay, so that the plants should not be sacrificed. (2) *Eucharis grandiflora*. This is attacked by a snail, especially where they are above the soil. Mr. CHAPMAN suggested plunging the whole pot in warm water for twenty-four hours, at intervals of ten days, as this, without injuring the plant, was effective against snails. (3) *Hymenocallis* sp. These proved to be nearly allied to *H. littoralis* and *H. caribaea*. (5) *Zizania aquatica* seedlings. Mr. ELWES observed that though supposed to be an annual it had become a perennial. Mr. BOWLES added that he had had it for four years, but it had never flowered with him.

Darwin Tulips.—Mr. SHEA exhibited a plant bearing four blossoms on one stem. Prof. PERCEVAL observed that such had occurred in Kent, especially on Darwin's and old English sorts. Also that many Tulips had seven or more perianth leaves, while the bracts were coloured. Lastly "singles" had become "doubles" this year. Mr. ELWES attributed these abnormal conditions to the perfect season of 1901 for ripening the bulbs.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

MAY 15.—The fact of the Manchester Whitsuntide Show opening on the day following this meeting had a detrimental effect, there being very few plants brought together.

R. ASHWORTH, Esq., Newchurch (gr., Mr. Pidsley), staged a few good plants, and received Awards of Merit for *Odonoglossum crispum* var. "Varro," a handsome spotted form; and *O. triumphans* var. "Jupiter." Some good forms of *Cattleya Mendeli* and *C. Schroderae* alba were also in the group.

A. WELLS, Esq., Sale (gr., Mr. Lamb), received an Award of Merit for *Odonoglossum* \times *Adriaene* var. "Charlemagne," a handsome pale form.

JOHN COWAN & CO., LTD., Galeacre, exhibited an interesting lot of hybrid *Masdevalias*, Awards of Merit being made to *Masdevallia* \times *Fraseri*, M. \times "Leda," and M. *Harryana* var. *miniata*. P. H.

BRISTOL & DISTRICT GARDENERS' MUTUAL IMPROVEMENT.

MAY 22.—In connection with this Society, the summer session was opened on the above date by Mr. F. Nash, Fellow of the Bath District Horticultural Association, who delivered a lecture on "The Future Culture of the Rose." Mr. E. Binfield occupied the chair, and there was a good attendance of members, which shows that the Society is in a thriving condition. Mr. Nash, who was accorded a good reception, remarked on this flower of flowers as being in existence since the world began, as we read that Eve, when leaving Paradise, craved for one souvenir, and the angel thereupon gave her a Rose! This queen of flowers has been vastly improved, and now stands second to none among our floral adornments of the garden, reflecting great credit on our raisers and cultivators alike. To grow the Rose to perfection the gardener must throw all his energy and skill into his task, and plant them in places most suitable for displaying their own loveliness. The uses which the Rose can be utilised for are numerous, and simply to form beds, such as we usually see, does by no means constitute a Rose garden. There should be banks, hedges, bowers, beds, screens, pillars, and such like, covered with Roses; river banks also would form a picture in itself, if judiciously planted.

The lecturer gave a selection of the best Roses to grow, as also useful hints for their successful cultivation. An excellent discussion followed his practical and highly interesting lecture, and he was awarded the heartiest thanks of the meeting for his visit, to which he suitably replied. H. K.

THE BATH & WEST OF ENGLAND.

PLYMOUTH, MAY 27 to 31.—Among the divers attractions provided for the public at the above show, horticulture was not neglected, a large tent being devoted to floral display. The Rev. A. T. BOSCAWEN, who has for some years carried off the premier prize at the Truro Daffodil Show, had the entire management of the horticultural section, and was successful in bringing together a very charming and interesting collection of flowers. Messrs. ROBERT VEITCH & SON of Exeter, filled the whole end of the tent, which was over 20 feet in height with a most artistically fashioned erection of virgin cork, which, with its rough ledges, some projecting many feet, gave to the eye the appearance of a rugged cliff-face. In the fore front was an informal pool of water containing the best and newest of Marillac's Nymphaeas, the pool being fed by a constant splashing of trickling drops, falling from the apparently

rocky seams in the background. The effect of the whole was greatly heightened by an arch of virgin cork, closely resembling rock, which sprung from the main structure, and half spanned the pool. Over the whole erection flowering and foliage plants were thoughtfully dispersed, *Roses* *Thalia*, *Aglaia*, and *Crimson Rambler* showering drooping wreaths of bloom from a projecting ledge; a large group of *Richardia Elliotiana* on one side of the water, around the verge of which were *Flag Irises*, *Sarracenia*, *Lilies of the Valley*, *Mimulus*, *Lotus pelicrhyneus*, and *Rodgersia podophylla*; while other flowering plants comprised *Watsonia Ardernei*, *Zenobia speciosa pulverulenta*, *Edwardsia graciliflora*, towering spikes of *Eremurus*, *Callistemon speciosus*, *Gerbera Jamesoni*, *Daphne Cneorum*, &c. The same firm also had a stand of rock plants, among which were *Aster canescens*, *A. Fremonti*, and others; *Lithospermum multiflorum*, *Morisia hypogaea*, *Alyssum spinosum*, *Phyteuma orbiculare* and *P. comosum*, and *Edrianthus serpyllifolius*.

Messrs. CURTIS & SANFORD, Devon Rosery, Torquay, exhibited a fine bank of flowering *Roses* in pots, which proved a centre of attraction to visitors. Amongst the most noteworthy were the single, silvery-pink *Irish Glory*, *Billiard d'Arre*, a climber, with full yellow flowers; *Sunset*, *Sunrise*, *L'Idéal*, *White Pearl*, *M. Ada Carmody*, *Kaiserin Augusta Victoria*, *Carmine Pillar*, and *Madame de Watteville*. In front of the pot *Roses* baskets of *Niphetos*, *Maréchal Niel*, *W. A. Richardson*, *General Jacquemont*, *Dupuy Jamain*, and *Mrs. W. J. Grant*, were arranged. A group of *Carnations* was shown, including *Malmaisons*, *flesh*, *pink*, and *red*, *Mrs. Torrens*, *Margot*, *Mrs. H. Cannell*, and *General Hunter*, glowing red, and a quantity of cut Tulips were shown.

Mr. W. J. GODFREY, Exmouth, showed numerous *Pelargoniums* of the zonal, ivy-leaved, and fancy sections; *Mimulus*, *Hidalgo Werrcklei*, and cut flowers of *Spanish Irises*, *Lupins*, *Oricotal Poppies*, *Anemone coronaria*, *Pyrethrum*, *Aquilegias*, *Plumbago capensis*, *Lilacs* in the best varieties, &c., the whole edged with *Asparagus Sprengeri*.

MESSRS. JOHN WATERER & SONS staged a fine selection of *Rhododendrons*, amongst which six pots of the peerless *Pink Pearl* were the cynosure of all eyes. Other handsome varieties were *Mrs. W. Agnew*, white, edged with pink; *John Walker*, deep rose; *Sappho*, white, with purple spotted blotch on upper petal; and *Luciferum*, *flesh-white*.

Mr. F. HOOPER, Bath, showed a good collection of cut blooms of *Pansies*.

Mr. H. HODGE, St. Austell, staged some excellent tuberous *Begonias*, double and single, as well as trusses of *Rhododendrons* and *Azalea indica*.

MESSRS. GEORGE COOLING & SONS, Bath, showed plants of the new *Rose Soleil d'Or*, *Irish Beauty*, single white; *Ards Rover*, *Marquise de Salisbury*, *Harrisoni*, &c.; also cut flowers of *Liberty*, new, deep crimson; *R. polyantha Schneewittchen*, very small white flowers, with a suspicion of pink; *R. sluica Anemone*, *Miss Low's China*, small, single, bright crimson *Rose*. The same firm also exhibited a good collection of large-flowered *Clematis* in pots, amongst which were *Gloire de St. Julien*, *Otto Friebe*, *lauginea candida*, *delicata*, *Anrora*, *Duchess of Edinburgh*, and *Fairy Queen*; early *Gladioli* in several varieties, and a spray of the Sweet-scented *Crab*, *Pyrus angustifolius*, double var., *flesh-pink* in colour.

Besides the foregoing nurserymen's exhibits, Mr. J. C. WILLIAMS sent from Werrington Park, an excellent collection of plants, including, amongst other things, *Gloxinias*, *Clerodendron Balfouriana*, *Spiraea*, *Caladiums*, *Orchids*, *Tropeolum tricolorum*, *herbaceous Calceolarias*, *Fuchsias* and *Hemanthus*, with *Ferns*, *Begonias*, *Palms*, and *Cycas revoluta*.

Mr. J. MARTIN, of Plympton, showed some especially fine *Streptocarpus* of his own raising; and Lord ARCKLAND contributed plants from the Kitley gardens. The great Palms that added so much to the appearance of the tent were kindly lent by Mr. J. C. WILLIAMS and Mr. A. F. BASSETT, of Trehidy.

Messrs. T. CHALLICE & SON, Plympton, were responsible for the decoration of the Council pavilion, which was prettily carried out with hanging-baskets and a variety of flowering and foliage plants.

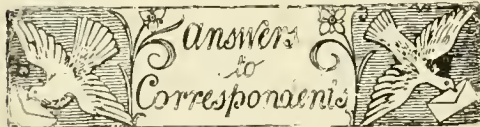
THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

MAY 28, 1902.—Among the subscriptions announced on the occasion of the annual festival on the above date were the following:—The Duke of Marlborough, £5; Messrs. Rothschild & Sons, £105; The Duke of Bedford, £50; The Baron Schröder, £50; M. J. Sutton, Esq., £50; Arthur J. Sutton, Esq., £50; H. J. Veitch, Esq., £25 5s.; N. Sherwood, Esq., £28 8s.; Lieut.-Col. Richard Pilkington, £15; C. A. Smith Rylands, Esq., £25; Sir Chas. Dyke Ackland, £20; W. Robinson, Esq., £20; R. Milligan Hogg, Esq., £20; W. Mackay, Esq., £21; J. Veitch & Son, Ltd., £21; Thames Bank Iron Co., £15 15s.; P. R. Barr, Esq., £15 15s.; Chas. E. Keyser, Esq., £10 10s.; F. Lloyd, Esq., £10 10s.; H. Jones, Esq., £10 10s.; Fisher, Son, & Sibray, Ltd., £10 10s.; &c.

Sydenham, Esq., £10 10s.; W. H. Massey, Esq., £10 10s.; J. A. Laing, Esq., £10 10s.; Proprietors of *The Garden*, £5 5s.; Proprietors of *Country Life*, £5 5s.; J. T. Anderson & Sons, Ltd., £5 5s.; J. Douglas, Esq., £5 5s.; W. Sherwood, Esq., £5 5s.; Edward Sherwood, Esq., £5 5s.; R. McVitie, Esq., £5; Geo. Bunyard, Esq., £5 5s.; N. L. Cohen, Esq., £5 2s.; J. McIndoe, Esq., £5; E. T. Cook, Esq., £5 5s.; J. Sweet, Esq., £5 5s.; R. Dean, Esq., £5 5s.; W. J. Nutting, Esq., £5 5s.; R. & J. Cuthbert, Esq., £5 5s.; Anthouy Waterer, Esq., £5 5s.; Lady Durning Lawrence, £5; ditto, Annual Subscription, £2 2s.; W. J. Jefferies, Esq., £5; George Monro, Esq., and his friends at Covent Garden and elsewhere, including: Geo. Mouro, Esq., £10 10s.; Joseph Rochford, Esq., £10 10s.; E. G. Monro, Esq., £5 5s.; Geo. Monro, Esq., Jun., £5 5s.; W. Poupart, Esq., £5 5s.; Alfred Watkins, Esq., £33 15s.; ditto, Annual Subscriptions, £7 7s.; James O'Brien, Esq., including Hon. W. Rothschild, £10 10s.; Capt. Holford, £10 10s.; Jeremiah Colman, £10 10s.; Norman C. Cookson, £5; and Geo. C. Raphael, £5. A. MacKellar, Esq., £32; James Hudson, Esq., £17 17s.; Geo. Norman, Esq., £20; Baily Wadds, Esq., £15 15s.; W. Thompson, Esq., £12 2s.; H. G. Cove, Esq., £10 10s.; A. B. Wadds, £10 10s.; Alderman R. Piper, £3 3s.; Geo. Woodgate, Esq., £7 7s.; W. Fyfe, Esq., £6 17s.; N. F. Barnes, Esq., £6 6s.; David W. Thomson, Esq., £3 2s.; R. Jones, £14 15s.; A. Porteous, £13 9s.; Charles Stocking, £11 11s.; P. O. Knowles, £11 8s.; J. Simmons, £12; H. Parr, £10 10s.; E. F. Hazelton, £5 10s.; Herbert Dowding, £5 2s.; and A. Bishop, £12 5s.

ENQUIRY.

SALT TO KILL WEEDS.—A correspondent, "D. & W. D.," would be greatly obliged if a reader of the *Gardeners' Chronicle* would kindly inform him what quantity of salt to put on a piece of foul land to kill all bad weeds and roots, and how much time must elapse before the land could be planted or sown. Also if any correspondents have had experience in using any of the liquid weed-killers for this purpose, and the length of time it must lie fallow afterwards?



A LOCALITY FOR ROSE-GROWING: A. E. Choose one from which the best exhibition blooms come, viz., Aberdeen, Bodale, Colchester, Thame, Canterbury, Great Berkhamsted, Belfast, Bath, Taunton, Cheshunt, and Waltham Cross. The subject which "Wild Rose" discussed in the *Gardeners' Chronicle*, February 11, 1899, viz., Climate versus Soil, was not followed by any important correspondence.

BEETLE: H. J. J. Certainly not the Colorado Beetle, but the very common Water-Beetle, *Dytiscus marginalis*; it is practically harmless.

BETTER ON GRAPE-VINE: P. T. Yes, the Vine-weevil. Trap them at night with slices of Potato, or tap the canes smartly at night, having spread a white cloth beneath them. They will drop on to this, and must be gathered up quickly.

BOOKS: W. R., Hull. Parkinson's *Paradisus* in almost perfect condition, with portrait of the author, 1629 edition. You might be able to obtain 30s. for it. Your best course will be to advertise it for sale.

CARNATION: C. B. We do not find any fungus, but the stems have been buried too deeply, and the stems have died accordingly.

CARNATIONS, AND "A WHITE WORM IN THE SOIL:" J. S. T. Can you not send a sample of the soil, and of the worm, and roots of the plants?

CERTIFICATE IN BOTANY: G. M'O. We do not understand your requirements. Write to the Director, Royal Botanic Garden, Edinburgh; or to the School of Science, South Kensington, London, S.W.; or to the Secretary, Royal Horticultural Society, 117, Victoria Street, Westminster, and you will probably get what you want.

CORRECTION: TEMPLE SHOW. H. N.—We regret that our reporter should have overlooked the fine lot of *Souvenir de la Malmaison* Carnations, shown by Messrs. Low, and numbering some hundreds of plants, covering a space of 150 square feet, and comprising all of the leading varieties in cultivation. Such omissions are not to be avoided in the hurried collecting of materials on this and similar occasions, though, of course, we do not attempt to refer to all exhibits.

CUCUMBER-LEAVES: R. N. D. See report of Scientific Committee in this number.

CUCUMBERS: R. J. D., Chigwell. We think you are right; the plant has had a check from too low a temperature or other cause.

FOUR CARNATIONS FOR GROWING FOR CUTTING: W. J. L. If tree varieties are required, choose *Uriah Pike*, dark crimson; *Winter Cheer*, bright scarlet; *Lizzie McGowan*, a very free-flowering, white-flowered variety; and *Reginald Godfrey*, pink, and nicely fringed petals. If for the border, choose *Ketton Rose Pink* or *Minerva*; *Mrs. Sidney Diver*, reddish-crimson; *Sir Henry Irving*, scarlet; and *Miss Florence*, white, with sometimes a rose-red flake on the petals.

FRUIT: Foreman. Probably a fungus; spray with Bordeaux-Mixture before the fruits ripen.

GERMAN SEED-FIRMS: S. J. N. Haage & Schmidt, and Heinemann & Son, all of Erfurt; L. Späth, Kopincher str. 154, Berlin.

GRAPE: Pathfinder, and L., Doncaster. Your Grapes are spotted with the fungus *Gloeosporium*. Try spraying with bisulphide of potassium (liver of sulphur), $\frac{1}{2}$ oz. to 1 gallon of water. Burn the affected Grapes.

LAWN INFESTED BY ANTS: F. Try the effect of pouring carbolic acid diluted with water into their nests, doing this with a small-spouted can, and after first making a hole with a dibber. Be careful not to spill the liquid on the grass. There is a remedy called the *Ballinkinrain* Ant-destroyer, and the address of the seller was given in a recent issue of the *Gardeners' Chronicle*.

LILY DISEASE: N. Devon. Too common—due to a *Botrytis*. Burn the leaves, dig up the bulbs, and keep them for a time in flowers-of-sulphur.

LOBELIA MRS. CLIBRAN: Clibran & Co. A very good variety, with indigo-blue flowers and a white centre. If the habit is good it will be an acquisition.

MELON LEAVES: W. F. See report of Scientific Committee in this number.

NAMES OF PLANTS: F. T. 1, *Richardia hastata*; 2, *R. melanoleuca*, var. *tropicalis*.—G. D. 1, *Geranium Robertianum*; 2, *Ranunculus repens*; 3, *Anthriscus vulgaris*; 4, *Lamium purpureum*; 5, *Vicia sepium*; 6, *Brassica nigra*.—T. L. *Amelanchier vulgaris*.—T. L., Ireland. 1, *Laelia purpurata*; 2, *Dendrobium suavisimum*; 3, *Gardenia intermedia*; 4, *Cyperus longus*; 5, *Oxalis Acetosella*; 6, *O. corniculata*; 7, *Cupressus Lawsoniana*.—F. W. B. *Berberis dulcis*.—A. R., Winton. *Leiophyllum thymifolium*.—W. G. 1, *Saxifraga hypnoides*; 2, *Polemonium coeruleum*; 3, send when in flower; 4, *Stachys lanata*; 5, *Pulmonaria officinalis*; 6, *Phalaris arundinacea variegata*; 7 and 8, send when in flower. Another time send better specimens and better labelled; 9, send when in flower. —C. S. 1, *Veronica* sp.; 2, *Saxifraga longifolia*; 3, *Veronica* sp.; 4, *Iberis corifolia*; 5, *Valeriana officinalis*; 6, *Aubrietia deltoidea*.—Walton, E. We have no time to name so many specimens, our limit is six. 1, a cut-leaved Beech; 2, *Viburnum Opulus*; 6, *Cupressus Lawsoniana*; 7, *Phillyrea media*. 9, *Cedrus Libani*; 12, *Prunus Padus*; 16, *Cercis siliquastrum*. Another time send better specimens, and remember that we are very busy with our editorial work.

S. Delytra formosa.—J. P. *Cattleya Mossiae Arnoldiana*; unless more colour comes into the sepals and petals than now appears, it is inferior to the one which recently got an Award of Merit.—R. R. *Odontoglossum* × *Andersonianum*.—W. R. 1, *Rhipsalis salicornioides*; 2, *Mesospinidium sanguineum*; 3, *Aërides Houletianum*; 4, not found; 5, *Maxillaria tenuifolia*; 6, *Sansiviera zeylanica*.—A. M. *Sempervivum arborescens*.—Constant Reader. 1, *Dendrobium crystallinum*; 2, *Dendrobium suavisimum*.—J. H. Broomend. 1, *Masdevallia ignea*; 2, *Masdevallia Harryana splendens*; 3, *Cypripedium*, if a seedling it is too near to C. exult to be of much value; 4, *Masdevallia Harryana* variety; 5, flower withered; 6, *Masdevallia Harryana purpurea*. Authorities refer M. Harryana varieties to M. coccinea. —A. W. S. Next week.—G. N. Bourne. *Prunus Padus* (Bird Cherry).—J. C. 1, *Saxifraga tridactylites*; 2, *Saxifraga hypnoides*; 3, *Saxifraga hypnoides* var.; 4, *Magnolia Soulangiana*; 5, *Mespilus germanica*.—A. *Prunus sinensis*, double flowered.—Tommy. *Prunus Padus*.

ONCIDIUM: F. Henkle. Hopelessly ruined in passing through the post.

PEACH LEAVES: R. H. The Peach-blister, due to the presence of a fungus, *Exoascus deformans*. Burn the affected leaves, and spray with Bordeaux Mixture next spring.—J. F., Ireland. We think your leaves are attacked by the shot-hole fungus, but will examine and report more at length on another occasion.

PEACH FRUITS: R. G. The fruits are affected with mildew badly. All such affected fruits should be gathered forthwith, and burnt, and the entire foliage, fruits, &c., be dusted over whilst damp with flowers-of-sulphur. The crop was perhaps a heavy one, and the tree has cast many in consequence; or they may have fallen because of the dryness of the border, which can only be ascertained by some one on the spot.

PHILOX STEMS SPLITTING: G. B. Probably the effect of frost on rapidly-growing stems.

REMOVAL OF PLANTS ON TERMINATION OF TENANCY: T. W. Unless an agreement to the contrary is in existence, the tenant may not remove anything if he be not a nurseryman or florist. In the case of nurseryman and florist way-going, saleable plants of all descriptions can be removed.

RHODODENDRONS: R. W. No doubt the cause was drought; the subsoil was doubtless dry, even if the surface was wet.

ROSE: J. G. Impossible to name this.

SAXIFRAGAS: F. U. & Co. We are quite unable to name the specimens. Send when in flower.

SHRIVELLING OF VINE FLOWERS: A. R. We are unable, without knowing more particulars, to assign a reason for the shrivelling of the flowers.

THE AWARD OF A CUP FOR AN EXHIBIT OF CUT FLOWERS: Amos Perry. The fact was published in our report of the show.

VINE INSECT: J. P. *Tortrix angustiorana*. Pick them off and burn them.

VINE-LEAVES: Correspondent. Warts on the leaves are caused by too high, and specially too moist an atmosphere, without sufficient ventilation.

COMMUNICATIONS RECEIVED.—W. W. S. R.—F. W. M.—F. G.—A. C. Torquay—A. & B.—F. N. W.—C. van den Basche, Tirllemont—L. B. New York—C. S. Boston—W. B.—G. McO.—J. R. Florence—G. W. E.—G. J. J.—J. Fraser.—H. F. G.—D. W. W.—W. B.—F. Ralph—W. W.—A. & B.—D. B.—R. D.—W. K.—W. H.—A. C. K.—T. H. S.—J. W.—E. J.—W. R. F.—Cooper's Hill.—E. C.—A. H.—J. P.—W. M.—Mrs. E. J.—N. E. B.—S. W. F.—Constant Reader.

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



VANDA KIMBALLIANA IN CAPTAIN HOLFORD'S GARDEN, WESTONBIRT, GLOUCESTERSHIRE.



THE

Gardeners' Chronicle

No. 807.—SATURDAY, JUNE 14, 1902.

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IN AN INDIAN GARDEN.

MY garden surrounds a low white bungalow. In front an avenue of trees and a wire railing covered with Convolvuli divide it from a road along which occasional *ekkas* jangle citywards; but at the back there is only a wide ditch, and then a stretch of brown fields dotted with clumps of silvery Pampas-grass, growing small against a distant line of village Palms.

Lacking attention, this little kingdom would run to seed in one season, and resolve itself into a melancholy waste of coarse grass and dust, with all the tender delicate tones flown as from a picture long exposed to the sunshine; though, since the shrubs of long growth die slowly, there would be some remaining patches of bright colour marking past care, and constituting that eternal contrast between the fulness of life and an ever encroaching decay, which is one of the features of this land. It is with infinite trouble indeed, and by means of endless watering, that as it is I manage to keep the place fresh and green, and uphold my predecessor's "make-believe" of English lawns. These spread away smoothly from the house, divided from it only by a broad strip of sharp red gravel, laid down as a protection against snakes, and from which the verandah-steps rise in tiers covered with Crotons and pots of Chrysanthemums, or other flowers according to the season.

I am writing this on my knee, sitting under the Mango-trees. It is difficult to believe that Christmas is not long over, and that in England people are probably skating, or plodding through the snow. The garden before me is a little world, not only of beauty with the feathery Palms curving and drooping against the sky, the clouds of Tamarind foliage, and the wild bursts of Eastern red and crimson, but of human interest also. Natives do not intrude themselves if you wish to ignore them, they are shadows merely passing silently, and scarcely recognised before your eyes. Apparently unobservant themselves, they squat upon their heels digging holes for the spring plants, or snip off dead leaves and buds as they pass from plot to plot with that slow grace of movement which in the Oriental marks an utter disregard of the value and limit of time. They could disturb no one. Nevertheless when I choose to think of it, I know that each coolie woman passing with her pitcher to and fro from the well has her own story filled with the joys and tragedies of life; and beyond the hedge which separates the vegetable-garden, the saice's babies are already tracing their first human efforts beneath the Castor-oil bushes, where they are spending their time raising mimic cities in the dust.

When I first wake in the morning and thrust back the shutters, the lawn lies before me bathed in a wide sheet of glistening dew. Gradually the rising sun disperses mysterious surrounding shadows, striking the whitened pillars of the old bungalow, a nodding blossom there, a cluster of wet leaves beyond, warming the scene into life. The blue mists give promise of the long heat and glare of the day, recede, now banding beneath the trees, then wreathing away into the more distant vistas, drawing back quite slowly like the finest of gauze veils, leaving the giant Azaleas, and one Rose-tree after another, standing in a brilliant foreground. Oh! there is joy in the first break of these glorious Indian mornings—the suspicion of frost in the air, the warmth of the sunshine, the certainty that another cloudless day has arisen, and will beat on in quiet peacefulness to its close. All the colouring is vivid, sharp, and fresh; the wheezy spraying water from his goat-skin seems to scatter diamonds broadcast. Parroquets flash in an emerald stream overhead; little hoopoes busy themselves at the edge of the path, cocking their fan-like crest in the sunshine; on the grass mainas and starlings settle their early disputes.

At the end of the further lawn there is a disused well. Bamboos have grown high around it, but on the south side they are cut away, and sitting on the rough parapet crowning the summit of the old sloping bullock-track, one can rest in absolute seclusion, looking away over the plain to the Ganges, winding in a long line between the crops. Or, by turning a little, we may watch the coolies at work amongst the vegetables, flooding the low beds by means of tin-piping, or diminutive canals which they dam with a handful of mud. Behind them the broad Banana leaves sway like a background of green flags. Sunshine is everywhere; now it strikes on the form of a girl at the well, flashing on silver amulets as she raises her arm; now on the brass pans of the old man

who sits scouring at the door of his hut; or it glances down through the heavy foliage of the Orange-trees on to the golden fruit. The head gardener moves amongst the workers; he lives entirely to superintend. He cuts the Roses, it is true, and fills my silver bowls with them, and every morning brings the first-fruits of the garden carefully laid out on a flat basket for my inspection; but with the exception of these duties, he remains day after day only to watch others work, not omitting to demand a holiday at intervals that he may depart and "bury a grandmother," after the manner of his kind. He is a thief, perhaps, and a liar most certainly; but he knows at least how to direct those under him to bring flowers to perfection.

Advancing hours drive one within doors, or at least to the verandah. The minutes creep on slowly towards noon, the sky is no longer bearable, and all below lies wrapped in a stupor born of intense light. Then the calm stillness of a long Sunday rests upon the garden, heavy shadows sleep upon the ground, the world is hushed. Only the natives move ever silently about their work, the water from the overturned pitchers of the coolies falling in monotonous plash upon the grass. To the heat of the day belongs all the wealth of Indian colouring, the glare of Poinsettias, the purple masses of Bougainvilleas, and the scent from the long cup-like yellow blossoms on the larger trees.

It is in the evening that I visit all my English flowers, the Violets first, grown in wide pots; then the Sweet Peas, and Mignonette and Velvet Pansies, it is their hour. Just as the early morning brought its own enchantments, and noon was heavy with the still completeness of full life, so now as the sun sinks in the west, thoughts turn towards home, and memory dwells amongst these fair fragrant flowers of another land.

And in my garden, the quiet night is as perfect as the day. Sitting out every evening beneath the brilliant canopy of stars, I watch the moon rise slowly, like a giant silver shield, with the Palm fronds lined across it, until clear at last of the topmost little pointed leaf of the Bamboos, it sheds a calm, most glorious flood of light upon the sleeping world. *K. M. Edge, Allahabad, N.W.F.*

NEW OR NOTEWORTHY PLANTS.

NEW IRISES.

IN the course of last year Messrs. Van Tubergen received from their collector in Bokhara a consignment of bulbs obviously belonging to the June group of Irises, collected in that country. They arrived in several numbered collections, presumably gathered from different spots; but on flowering proved to belong to two forms only, to which, for reasons given below, I have ventured to apply the above names.

IRIS BUCARICA, *Foster, sp. n.*

(See fig. 135, p. 387.)

Bulb similar to that of *I. orchoides*, but in the specimens received more globose. Stem, about 1 foot or 1½ foot high, bearing six or seven leaves, each of which sheathes the stem at its base, and three, four, or more flowers. So far the plant in its general features resembles *I. orchoides*, but the leaves are somewhat shorter and less gradually pointed, and more distinctly striated on the under surface. Moreover, while in *I. orchoides* each flower is set on a distinct peduncle, in this plant the

peduncle is quite short, or the flower is actually sessile. The horny margin of the leaf bears, as in *I. orchoides*, a number of inconspicuous setæ. The plants are smaller, shorter, and more slender than those of *I. orchoides*, but this difference may disappear on further cultivation. Spathe valves, as in *I. orchoides*, longer than the tube, narrow, not inflated, slightly scarious at the tip.

The outer petal, fall, consists of a strap-shaped claw, which, after an inconspicuous constriction, expands into a much broader, obovate, emarginate blade, which bears on its hinder two-thirds a large plicate crest, continued along the claw as an inconspicuous median ridge.

The claw is pure white in colour, the blade with the crest a rich golden yellow, which suddenly ceases where the blade joins the claw. By the side of the crest over the blade are a few diverging dark purple, almost black veins, varying in intensity in different flowers. Messrs. Van Tubergen inform me that some of the plants show variations in the markings.

The inner petal, standard, small, pure white, extended horizontally, consists of a caniculate claw expanding into a broader, flat, distinctly mucronate blade.

Styles large, pure white, with large white, quadrate, or in some plants deltoid crests. Anthers as long as, or slightly longer than the filament.

Tube about three times as long as the rounded, trigonal, thin-walled ovary.

Seeds not as yet seen. Ripening capsule, like that of *I. orchoides*, long, rounded trigonal.

Habitat, Eastern Bokhara, on mountain slopes, alt. 5000 to 6000 feet, on sides of river Sureh-ab, a tributary of the Amu Darya.

The points of specific difference between this plant and *I. orchoides* lie in the flower. In *I. orchoides* the outer petal is simply strap-shaped, with no obvious distinction between claw and blade; and the crest is less conspicuous. In *I. orchoides* the inner petal is lanceolate, and never, so far as I have seen, distinctly mucronate, as in the plant now described. In *I. orchoides* the crests of the style are smaller, and the anthers are apparently always shorter than the filaments.

IRIS WARLEYENSIS, Foster, *sp. n.* (fig. 134).

In bulb, habit, stem leaves, and inflorescence, this plant closely resembles *I. orchoides* var. *cœrulea*. The resemblance is carried so far that it agrees with *I. orchoides* *cœrulea*, and differs from both the typical *orchoides*, and from *I. bucharica*, in that the horny margin of the leaf is more conspicuous, and is entirely free from setæ. It differs from *I. orchoides* *cœrulea* wholly in colour, and in two or three features of form. These latter are as follows:—In this plant the strap-shaped claw with a wavy edge expands somewhat suddenly into a short oval, almost orbicular blade. In *I. orchoides* *cœrulea* the strap-like claw with an even edge expands gradually into a long, narrow, oval blade. In this plant the blade is deflexed abruptly both from before backwards, and from side to side; this does not occur in *I. orchoides* *cœrulea*. In this plant the crest on the blade is less plicate, and does not extend so far as the claw. In this plant the horizontally-extended small inner petal is conspicuously mucronate. In *I. orchoides* *cœrulea* the inner petal is simply lanceolate, not mucronate at all, or very obscurely so.

In colour, the plant in question differs widely from *I. orchoides* *cœrulea*. In the latter the blade of the outer petal varies a good deal in tint, but the colour is never

deeper than lavender, while a pale yellow zone which surrounds the yellow crest extends some distance over the blade in front of the crest.

In *I. Warleyensis* the claw of the outer petal is pale violet in colour, with two or three parallel veins much deeper in colour, and a low white median ridge which, as the claw passes into the blade, becomes a crenate crest, deep violet or purple behind, bright

deal in the depth, or even in exact hue of the violet or purple; but in all the colour is a deep rich one, not a pale one as in *I. orchoides* *cœrulea*. The small, horizontal, mucronate standard is violet in colour. The style is violet on its outer upper surface, paler within; its tall quadrate crests with gently wavy margin are violet in colour. Seeds not yet seen; ripening capsule like that of *I. bucharica*. Habitat, same as *I. bucharica*.



FIG. 134.—*IRIS WARLEYENSIS*.

orange in front. Around the crest, that is at its sides, is a conspicuous zone of bright orange, outside this the blade is of a rich deep violet hue, save for the extreme margin which stands out as a conspicuous white border. The several plants, however, vary a good deal in colour. In some the white margin is much less conspicuous, in some wholly absent. In some plants the orange zone or "signal" round the crest is broad, in others narrow, and in yet others wholly absent. And individual plants vary a good

Both these plants, *I. bucharica* and *I. Warleyensis*, are very beautiful, and a real addition to the treasures of the garden.

I dare say I shall be blamed for unnecessarily creating two new species. For the four plants, *I. orchoides*, *I. orchoides* *cœrulea*, *I. bucharica*, and *I. Warleyensis*, form together a group, the features of which as a whole sharply and clearly distinguish it from all other forms of Irises, just as *I. caucasica*, *I. Tubergeniana*, *I. Willmottiana*, form just such another group; *I. sindjarensis* and *I. asiatica*

another, and *I. persica* with *I. Heldreichi*, *I. Tauri*, &c., another; * and it might be, from a purely botanical point of view, desirable to consider each group as one species. But the four plants in question are, in the gardener's eye, four absolutely distinct and separate plants, and he must have a separate and distinctive name for each of them. Such a distinctive name is what the gardener understands by the term species; and it is no use trying to tell him that the differences are not of specific value. He will regard them as

orchioïdes cœrulea and the typical *I. orchioïdes*, are as great and as clearly definable as the differences which, in the case of many other plants, are accepted as a specific value.

Lastly, I will remind the reader as an instance of how difficult it is to stop when you refuse to admit small differences as justifying specific names, that *I. orchioïdes cœrulea* was first described by Regel as *I. caucasica cœrulea*; and yet the differences between *I. caucasica* and *I. orchioïdes* are most marked. *M. Foster, Shelford, May 20, 1902.*

pect that the lovely *K. kewensis* owed any part of its origin to *K. flammea*. In the form and colour of its flowers, *K. kewensis* much resembles *Erythraea Centaureum* on a grand scale, the soft deep pink colour being very similar to that of this charming little British Gentianaceous plant. For horticultural purposes this hybrid ought to be a valuable acquisition, as it keeps in blossom for a considerable time, each flower lasting for about two weeks; when out of flower it is of a very striking and somewhat quaint appearance.

The following is a detailed description of the plant as it at present exists at Kew, where it is now in flower:—

Stem 3 to 4 ft. high, $\frac{1}{2}$ in. thick at the base, simple, but it will probably branch with age; glabrous, dull purplish. Leaves opposite, 4 to 9 ins. long, fleshy, glabrous, olive-green, tinted with purplish on the basal part, the lowermost and some of the uppermost are subterete and channelled down the face, or flattened and varying from lanceolate to elliptic, entire, slightly toothed, the rest divided below the middle into three subterete, acute prongs, channelled down the face, about 5 lin. broad and $3\frac{1}{2}$ to 5 lin. thick, the two lateral ones being $1\frac{1}{2}$ to 2 ins. long, the middle one 4 to $5\frac{1}{2}$ ins. long, and often furnished with one to four teeth or small lateral prongs; the upper leaves are gradually reduced, and more distant. Cymes grouped in a subcorymbose panicle, about 8 ins. in diameter, moderately compact, trichotomous, perfectly glabrous in all parts. Bracts 3 to 10 lin. long, linear-lanceolate, acute, fleshy. Peduncles 2 to 3 ins. long. Bracteoles 1 to 3 lin. long, subulate. Pedicels 3 to 5 lin. long. Sepals 4 to $4\frac{1}{2}$ lin. long, lanceolate, acute. Corolla-tube $\frac{2}{3}$ in. long, $\frac{1}{6}$ in. square near the base, tapering upwards, pale greenish; lobes 5 to $5\frac{1}{2}$ lin. long, $2\frac{1}{2}$ to 3 lin. broad, spreading or slightly recurved, of a brilliant soft rose-pink. Stamens, eight, in two series, inserted in the throat of the tube, with the anthers of the uppermost series at the mouth, or very slightly exserted; filaments, $\frac{3}{4}$ lin. long. Hypogynous glands, 2 to $2\frac{1}{2}$ lin. long, linear-filiform, whitish; carpels, 7 lin. long, tapering into slender styles, green below, yellowish above; stigma small, subcapitate. *N. E. Brown.*



FIG. 135.—IRIS BUCARICA. (SEE P. 385.)

"species," however much the botanist may attempt to use a varietal nomenclature. I accept the situation, and venture to speak of *I. bucharica*, *I. Warleyensis*, instead of *I. orchioïdes* var. *bucharica* and var. *Warleyensis*. At the same time, it must be remembered that the differences such as I have described above between these several four plants, between *I. bucharica*, *I. Warleyensis*, and *I. orchioïdes*, and indeed, between *I.*

* In my *Bulbous Irises*, I referred to several varieties of *I. persica*, flowers of which had been sent to me from Asia Minor, and some of which I had cultivated for a short time only; though, alas! these are now appearing as *I. Heldreichi*, &c.

KALANCHOE KEWENSIS ×.

This is a new hybrid raised at Kew in 1901 from seeds of *K. flammea* fertilised by the pollen of *K. Benthii*. In every way it is a very remarkable and beautiful plant, very striking in appearance, perfectly distinct from every other *Kalanchoe* in cultivation, and in its large inflorescence of deep pink flowers may fairly claim to be the most beautiful of them all. In habit and foliage, except in the forking of the leaves, it resembles the male parent, there being very little trace of *K. flammea* in its composition; indeed, if the female parentage were unknown, no one would sus-

HORIZONTAL CORDON APPLE TREES AT SHERBORNE CASTLE.

WHILST there may be some doubt as to the correctness of the dictum that he who "breeds fat cattle should himself be fat," most certainly it is essential that one who undertakes to write garden Calendars for the instruction of others should himself be a good practitioner. For the present year, Mr. T. Turton, the able gardener at Sherborne Castle, Dorset, is writing for the *Gardeners' Chronicle* the weekly kitchen-garden Calendar. A look over the Castle kitchen-gardens at any time will show that the writer is a capital vegetable grower. Equally so is it evident that he is a capable fruit grower. A very interesting feature in one of the walled-in gardens is the large number of horizontal cordon Apple-trees planted by the late Mr. Pragnal, Mr. Turton's predecessor, from fifteen to twenty years ago, that in treble rows run round three sides of the four quarters into which the area is divided. Of these cordons there are no fewer than the large number of 225. The first row is about 16 inches from the box-edging that margins the walks, and the

others are each 2 feet apart. Then the front wire and trees are some 12 inches from the ground; the second row 16 inches, and the third one 20 inches. The trees are planted in some cases 10 feet, and in others 12 feet apart, and are all kept well spurred. Fine fruit and good crops are usually obtained, and generally the fruits ripen rather early, the warmth which arises from the soil doubtless helping to that end. Cox's Orange Pippin is largely represented, and of other varieties there are included Bismarck, Jas. Grieve, Lord Derby, King of the Pippins, Kerry Pippin, Prince Albert, Lord Suffield, and others. Espalier Apple and Pear-trees are being largely planted also, as these forms of training seem to give such excellent results. There are many bush-trees also in other gardens, for their nature as fruit-producers is so well appreciated. Evidence of the quality of the Sherborne fruit has occasionally been seen at the Crystal Palace Fruit show. A. D.

A WEEPING SEQUOIA GIGANTEA AT DALKEITH.

INTERESTING trees in plenty adorn the gardens and grounds of the historic Dalkeith Palace. Of course, the most prominent are woodland trees, of which there are many good examples. The choicer Conifers are for the most part scattered pleasantly over the green turf by the side of an elaborate scroll border, and a long pergola well covered with Roses. Among a choice array, this peculiar form of *Sequoia gigantea* at once attracts attention. It is well-formed (fig. 136), in good health, although growing in a somewhat exposed S.E. position. The contrast between the pendulous and the normal form of *Sequoia* is great indeed, although one does sometimes see trees of the type that through lack of shelter develop into gaunt-looking forms, sparsely furnished over with stunted branches. At the time of the Conifer Conference in 1891, this fine tree measured 13½ feet in height. Mr. Whytock, the gardener at Dalkeith, tells me it now measures 19½ ft. Its age is twenty-six years. Perhaps other good examples of the Weeping *Sequoia* (*Wellingtonia*) exist in gardens, and it would be interesting to learn particulars of such remarkable trees. All pendulous Conifers should be planted as isolated specimens on a sheltered site, where this peculiarity can be clearly seen and admired. D. S. Fish, Edinburgh.

FOREIGN CORRESPONDENCE.

THE WILD TULIPS OF ITALY.

I SEE many references to Tulips lately in the *Gardeners' Chronicle*. Can anyone throw any light on the wild Tulips of Italy? There are said to be twenty or more varieties in Tuscany alone, and I have grown *præcox*, *silvestris*, *Clusiana* (which has the pretty local name of *Bandiera di Toscana*), *neglecta*, *oculis solis*, *etrusca*, *saxatilis*, *lurida*, *strangulata*, the rare and magnificent *strangulata* *Buonarottiana*, which grows 1½ ft. high, and looks like a flame in the distance; and the very rare and beautiful *Sommieri*, for nine years, and they have always come true.

I believe the theory is that Tulips were imported into Europe in the 17th century; but if so, where did the old Italian painters see them? In the background of several pictures of the 15th and 16th centuries Tulips are visible. Janet Ross, Poggio Gherardo, Settignano, near Florence, Italy.

FORESTRY.

TREATMENT OF PLANTATIONS WITHOUT REGULAR THINNING.

HAVING returned from my May cutting, I send you a few particulars. The under-planting with Silver Fir was completed from 1898 to 1901, at a cost of £9 6s. 4d. for trees and labour, and it includes three rows of trees that were planted in the 20 feet cuts made in the month of May, 1895, and 1340 Beech and 800 Silver Fir were used. Under-planting



FIG. 136.—WEEPING TREE OF SEQUOIA GIGANTEA, IN THE GROUNDS OF DALKEITH PALACE.

was carried out at a distance of 6 feet from any tree, and the trees at 6 feet apart. The Larch have grown fast since the last openings were made in May, 1895. This year there is not one Larch-tree dead in the field part, which shows that the opening made in the field part has done good. Nine dead Larch were cut in the field part in 1901. The plantation has more than fulfilled my expectations, and is fit to be seen by anyone who takes an interest in the management of plantations.

It is difficult to find a branch as big as my thumb on any Larch within 40 feet of the ground, and many of the trees are stripped of their dead branches by my plan of throwing

those that are cut between two trees that are left standing, thus preventing the dead branches being included in the living wood. There is a good deal of Larch-canker in some plantations in East Cornwall; none in mine, which I attribute to the openings that have been made from time to time as the early ones closed up. As the Larch only were cut in the 20-foot cuts, and they were planted with three rows of Beech and Silver Fir in November, 1895, the ground is nearly covered, and the beauty of the views enhanced by being able to see much further than you can in a regularly thinned plantation.

In the paper you kindly published in 1894, I stated that the first cuts were commenced in 1877, twenty years after planting; these were made 12 feet wide. When these had nearly closed up in 1881, cuts were made 16 feet wide, parallel to the roads, and nearly at right angles to the first cuts. These had nearly closed up in 1895, when it seemed to me that the growth of the trees had nearly come to a standstill. Suppressed trees and dead ones that were saleable were always removed. I contend that the difference of temperature of open and close wood promotes circulation of air whether there is wind or not, and therefore healthy growth, and gives variety and beauty to the scene; whereas the branches are as effectually killed as in close plantations without any openings. Henry Rogers, Hartley, Plymouth.

SOME EFFECTS OF THE PAST COLD WEATHER ON FOREST PLANTS IN SURREY.

The effects of the cold weather during the past winter and in May on our forest plants in Surrey appear to be of sufficient interest for a notice in the *Gardeners' Chronicle*. There was persistent frost during the first three weeks of February, Virginia Water being frozen over and frequented by skaters. The only plants in my nursery at Englefield Green that were injured by these winter frosts are those of the Pacific variety of Douglas Fir; many of these lost their leaders, or were killed outright. This variety apparently shoots out later than the Colorado variety, for during the recent frosts in May, all my three years' Colorado transplants have been greatly injured, chiefly in their sprouting side-shoots. No further injury to the Pacific Douglas plants has occurred, however, their buds having been dormant till May 25, when the weather became warm. The coldest night was on Tuesday, May 20, when the morning temperature on the grass registered 28° F. This frost has also injured my Silver Fir four-year-old transplants, killing their sprouting side-shoots, but generally sparing the leading buds, which had not commenced growing.

The leading shoots of 10,000 Silver Fir yearlings, which I lined out during the last week of February, are also seriously injured by the May frosts. Colorado Douglas Fir, two-year-old plants, and Spruce yearlings, which were lined out during the winter, have practically escaped injury from the May frosts, and so have Scotch, Corsican, and Weymouth Pine, three-year-old transplants. The Weymouth Pine, however, had not sprouted before the frost, though all the other plants mentioned had done so. Some Spruce three-year-old transplants have their side-shoots slightly injured.

I sowed several beds of Silver Fir last December, and they germinated freely in April, but I effectually protected them against the May frosts by sticking some leafy Elm branches round the beds. Of my other seed-beds, Corsican Pine, Larch, and Spruce yearlings escaped injury, and although the

Colorado Douglas Fir yearlings have been slightly touched by frost, the damage done to them is not of a serious nature. My sowing of coniferous seeds was done early in May, and the plants only began to germinate after May 25, so that they have completely escaped injury from frost.

This nursery of about an acre is on the Bagshot sand, and the ground is quite flat; it is protected by an Elm hedge to the north, and by a Whitethorn hedge to the east, but is otherwise exposed to the weather. In Messrs. Fromow and Co.'s nursery, Windlesham, which I have just visited, Spruce transplants, which sprouted early, have suffered much more than Silver Fir, which sprouted late, especially *Abies nobilis*, which escaped all injury from the May frost. Spruce planted in spring

Oxshott, on the Bagshot sand, on sloping ground facing north, although in full foliage, escaped injury from the frost, except a few plants in the lowest part of the nursery, and even there the injury done was not serious. Many of the Oak standards in the Princes Coverts were still leafless on May 22, and barking the felled trees was a difficult business. A few years ago I found all the Oaks in these coverts with their foliage completely blackened by frost on May 20, but there had been a warm spring, and the buds had opened early.

It would be very useful if some other of your correspondents would give similar information regarding their experience of the effects of frost on forest trees. W. R. Fisher, Cooper's Hill College, Staines.

with no botanical interest to grow it. I must, however, in justice to the vendors, say that they held out no delusive inducements to purchase this curious *Fritillaria*. I observe that it was described by Mr. Baker in the *Journal of the Linnean Society*, xiv., 270. S. Arnott.

HELIOTROPIUM VOLTERRA.

This is recorded as the first of the numerous dark-flowered varieties raised from the original *H. peruvianum*. As a pot plant for the conservatory it is very pretty; its neat, dark blue flowers, with a white throat and rich vanilla-like perfume, are always attractive and gratifying to admirers of the old favourite Cherry Pie. The French call it *l'Héliotrope de Volterre* (*H. Volaterrae*), and MM. Decaisne and Naudin state that there is an error in a great many gardening books, in which it is written "*Héliotrope de Voltaire*," although it is in reality named from the town Volterra in Italy. J. Murison.

ODONTOGLOSSUM × ADRIANÆ COOKSONÆ.

THE remarkable hybrid, the subject of our illustration (fig. 137) was exhibited by Norman Cookson, Esq., Oakwood, Wylam-on-Tyne (gr., Mr. H. J. Chapman), at the meeting of the Royal Horticultural Society at the Drill Hall on Tuesday, May 20, among a group of very interesting Orchids, for the names of which see our report of the meeting in the issue for May 24 last. The flower possesses creamy-white sepals and petals, evenly blotched with brown; the lip is prettily fringed and crimped, and is white, with brown spots, the crest being yellow.



FIG. 137.—ODONTOGLOSSUM × ADRIANÆ COOKSONÆ, GROWN AT OAKLANDS, WYLAM-ON-TYNE.

DOWNSIDE, LEATHERHEAD.

THE extensive Rose garden at Downside, so well planned, and which has some finishing touch added to it year by year, is just now full of glorious promise, and a month or less hence there will be a harvest of bloom that will be almost dazzling when at the height of its beauty; and, as Mr. Alfred Tate observed to me as we stood on the outskirts of the gardens, it will be some three or four years hence before it may be regarded as mature. Some new feature is added yearly; new Rose arches push the outworks of the Rose garden further afield—there is yet ample space for expansion. Roses in pots under glass are just over; overhead *Maréchal Niel* and *Niphetos* have yielded an abundance. There is a house in which Teas are planted out for early bloom, that are certain to produce magnificent flowers; at present the roof-lights are removed, and are practically in the open air, and then comes the outdoor gardens.

Caladiums and Coleus are in fine character; the former for house, the latter for conservatory decorations. Bright Azaleas, *Rhododendrons*, *Calceolarias*, Orange-trees, producing large sprays of blossom; these, with *Calceolarias*, stellate *Cinerarias*, &c., now occupy the conservatory, to be succeeded by *Fuchsias*, of which a large variety is grown; *Streptosolon Jamesoni*, which Mr. Mease cultivates largely, and in very fine specimens, &c.

The fernery, at the end of the conservatory, is delightful. Mr. Mease remarked that *Begonias* of the *Rex* type pass through the winter unharmed, though the temperature sometimes falls so perilously near to freezing-point.

Cliveas have been very fine, and there are several remarkable specimens, but they are now getting past their best. *Malmaison Carnations* are very fine; they are blooming

sprouted later than that planted in autumn, and so escaped injury, while autumn-planted Spruce suffered severely from the May frosts.

In our Cooper's Hill plantations, eleven years old, no injury has been done by frost, either to Conifers or to broad-leaved plants. These plantations are on London clay, capped in the upper part of the plantation by Bagshot sand, and are on a northern aspect; they are in fine condition, several Larch poles being over 30 feet long and 2 feet in girth at the base. The Oaks in these plantations had not opened their buds by May 25, though some crowded Oaks of the same age on the Bagshot sand, in a flat place above the plantation, are in full foliage, the same being true of all the older Oak-trees around the plantation on the London clay.

Much damage has been done by the frost to about 20 acres of Ash, planted out last autumn under Oak standards on the London clay, in Princes Coverts, Oxshott, Surrey, these plants being in full foliage when the May frosts occurred. They were all black from frost when I saw them on May 22. Similar Ash-plants in a nursery at

PLANT NOTES.

FRITILLARIA LIBANOTICA.

THIS Syrian *Fritillaria* has recently been introduced into commerce, and is now in bloom in my garden, where its appearance is more singular and interesting than attractive. Its colouring is of the quietest kind, and it has little of the pretty marking which makes the interior at least of so many of its congeners worthy of admiration. My plant came to me from Naples last autumn. It has attained a height of about 18 inches, and has produced an arching raceme of small greenish flowers, produced in succession, a few together. There are thirteen on the raceme, which arches over rather prettily. The stem, to a height of about a half of its length, is clothed with rather long, broadish, acutely-pointed leaves, generally in threes, and of a pale green. *Fritillaria libanotica* is what a well-known amateur would rightly call a "pooh" plant, so far as merely decorative purposes are concerned, and this note is penned rather with the object of warning than inducing anyone

freely. Mr. Mease speaks very highly of Princess May, a rich, deep rose-coloured variety, which, he says, commences to bloom unusually early for a Malmaison, and continues to do so all through the winter. Nell Gwynne, which is regarded as the only white Malmaison yet raised, has compact, ball-like blossoms, on long stems, and is admirable for cutting. There is quite a general collection of plants, including some choice Orchids, all in the best condition; the houses are a picture of neatness.

Peach-houses show luxuriant, well-managed trees, carrying highly-promising crops of fruit. It is the same with the vineries; they are well ordered.

On the terrace garden some circular beds of a violet-tinted Aubrietia are very fine, and just at their best. Beds of Wallflowers edged with a yellow Viola are still very gay, and dispense a delightful fragrance. In the pleasure-grounds a large bed of Berberis stenophylla is over, being fully exposed; but it must have been a fine sight when in full flower.

The foregoing are only a few of the interesting details to be observed at Downside at all seasons of the year. Mr. Mease's capable management is apparent on every hand. R. D.

NURSERY NOTES.

LILIES OF THE VALLEY AT DERSINGHAM.

MR. THEODORE JANNOCH is very well known for his successful cultivation of the Lily of the Valley, a plant that he has studied very closely for many years. A visitor to his nursery in Norfolk at the present time would find, as we did on a recent occasion, great breadths of Lilies planted out in single rows like Onions, with sufficient room in the lines and between the rows for each crown to develop strongly. The object is to obtain strong "flowering crowns," that is, crowns that may be depended upon to produce a flower-spike when required. At the end of the season, it matters not whether the crowns be allowed to remain in the nursery, or whether they are lifted and sold for forcing for Christmas, or retarded in cold rooms for blooming at the Coronation, or in September, the result will be approximately the same; if the crown has stored the necessary strength for blooming, it will flower under any of the conditions described above.

Mr. Jannoch has found that in ninety-nine cases out of one hundred, the crowns will not produce flowers until they are three years old, and only every alternate year afterwards. But the cultivator with experience, and if his plants are in such suitable soil as Mr. Jannoch has, may induce his crowns to flower two years in succession, providing he pulls the flower-spike away before the little bells have fully opened. It will not do to cut them off, for unless the spikes be pulled away from the very base, it will have no effect.

Another plant to which Mr. Jannoch gives considerable attention is the Lilac. We saw large numbers of these planted out in brakes to form plants for forcing next season, and excellent growth they make. A large quantity of named varieties are kept true, and are propagated by budding on to the common *Syringa vulgaris* in June or July, or by cuttings. A few varieties are said to succeed better from cuttings. Mr. Jannoch informed us a fortnight ago that he had still 6,000 Lilac-plants retarded in cold rooms; probably many of these are now producing their flowers for use during the coming festivities.

We were surprised to see so many species of Asparagus in one of the glasshouses, including *A. plumosus*, *A. p. nanus*, *A. Sprengeri*, *A. sarmentosus*, *A. deflexus*, *A. decumbens*, &c. There is a variety of *A. plumosus* here that may more fittingly be termed *nanus* than most plants grown under that name; it is a weaker grower, has very thin, wire-like shoots, and never "runs away," as the grower would say. Chrysanthemums, Roses, Ferns, and many other plants are cultivated that are of use in supplying material for the making of all kinds of florist's specialties.

The visitor to Dersingham for the first time will not fail to notice its scattered character. The village consists of a narrow belt of houses in the form of a circle, three miles or more in circumference, the green centre of which consists of meadows and other agricultural land. The church is more than a mile from the station, and the best hotel more distant than the church.

The Week's Work.

FRUITS UNDER GLASS.

By JAMES WHYTECK, Gardener to the DUKE OF BUCKLEUCH, Dalkeith, Scotland.

Pineapples.—The fruiting Queens, started in January, and now furnished with swelling fruit, may be afforded twice a week diluted manure-water from the cowshed, and a genial moistness in the air, the mean temperature being maintained at 70°, and closing the house on sunny days with the heat at 90° to 100°. When a fruit begins to show the least degree of yellow tinge, afford no more manure-water and much less clear water at the root, and admit more air and keep the house drier.

Succession Queen Pine plants for fruiting next year, should be examined as to the state of the soil as regards moisture twice a week, and the house kept close and moist, or they will get drawn; afford air early in the day, and increase its volume as the day advances. At closing time in bright weather afford the plant a light dewing over. The temperature at night may range from 65° to 70°.

Smooth Cayennes, to supply fruit during next winter and spring, should now be in their fruiting-pots, or as soon as the rooted suckers are ready, and should be placed in the division in which they are to fruit. The woodwork and glass of the house should be cleansed with hot-water, white-washing the walls and painting the woodwork if necessary. Freshen up the bark-bed with fresh bark, mixing it well together with that which is retained. Plunge the pots to the rim, and at 2 feet apart. Fruiting-pots for Cayennes should be 11 inches in diameter, and be clean or new, and efficiently drained. The best sort of soil is light turfy-loom, to which a 7-inch potful of bone-meal per wheelbarrow-load should be added. Before potting, set free the outer roots on the ball, and in filling the pot ram the soil firmly. The warmth afforded at night may range from 70° to 75°; afford air early in the day, and increase the amount as the temperature rises, closing on bright afternoons with a temperature of 90°, moistening the plants overhead, and damping all walls, paths, &c.

The Latest Vineries.—The berries being set, no time should be lost in thinning those varieties that set thickly, thinning them sufficiently to allow for their swelling to a large size without crowding, otherwise the object of thinning would be defeated. Do not retain mere bunches than the strength of the Vine warrants, or the produce will be lacking in finish. The young leaves of Gros Colman, Appley Towers, and Lady Hutt are apt to be scorched by strong sunshine, and it will be advisable to mix together some flour-and-water and sprinkle the roof of the vinery. Some growers of Grapes for market in the south sprinkle roofs of all their vineries. Let the stopping of shoots receive regular

attention, so as to obtain large leaves of a leathery texture on the main shoots; and in order to do this the borders, if not very deep, should be top-dressed with Vine-manure, and clear water afforded afterwards, if it be necessary. Borders, when made of light soil, require much clear water, and occasionally manure-water; whereas borders consisting of retentive soil having once received water copiously, may require no more for the season. In order to make sure of the condition of the border, test it with the testing-instrument. Maintain a temperature at night of 65° to 70°; apply air early in the day at the top of the vinery, and obviate aridity in the vinery by frequently damping down.

THE KITCHEN GARDEN.

By T. TURTON, Gr. to J. K. D. WINGFIELD DIOBY, Esq., Sherborne Castle, Dorsetshire.

Kales.—In cloudy or showery weather plant Cottagers' Asparagus, tall, dwarf, and curly, varieties of Scotch and Drumhead Kales, on land that will not be required for other purposes till late in the spring of 1903. If a north border is available, plant some of it with Asparagus, Cottagers, and Scotch Kales for a late use, these usually affording heads or young sprouts after the removal of the head till the spring Cabbage is fit for use. This arrangement admits of the principal crops being cleared off in time for planting the land with Potatoes. For the Cottagers and the tall Scotch Kales, afford 3 feet from row to row and 2 feet from plant to plant. It is good practice to plant these tall growing varieties in deep drills drawn out with a draw hoe which admits of the stems being deeply earthed up, and steadies them.

Broccolis.—If the land prepared for this crop is vacant, plant these also, and thus afford them a chance of becoming established at an early date; and assuming that the land has not been much enriched, a long season of steady growth will tend to give firmness to the stems, and thus enables the plants the better to withstand frost. Late planting means late growth made in the autumn, and greater tenderness and liability to get cut by frost. The earlier varieties of Broccoli may be planted on the ground where the late Celery was grown, without any further preparation beyond a thorough hoeing, providing the land is in good heart; or liquid-manure may be applied before planting. Broccolis should not be planted closer than 3 feet from row to row, nor 2 feet in the row. Where it is necessary to defer planting till old plantations of Strawberries or other crops are cleared away, let the plants be pricked out on an open piece of ground, in rows at 1 foot apart and 6 inches to 9 inches apart in the rows. Keep the plants in the seed-beds quite free from weeds, and if sown in rows, hoe the intervening spaces.

Thinning Crops.—This important work should be kept well in hand whilst there is a chance of rain falling, to enable the plants to recover from the unavoidable disturbance of the roots. Besides the subjects mentioned in former Calendars, those now requiring attention in this respect are Salsafy, Scorzonera, the main crops of Beetroot, and Carrots.

Pot Herbs.—Keep the lines of seedlings free from weeds, hoeing between the lines, and thinning the plants as soon as they are large enough to handle.

Tomatos.—Planting out should forthwith be completed, and in accordance with the directions given in a former Calendar. If grown in one patch let the lines stand at 3 feet apart, and the plants in the lines at 18 inches apart. Plants set out a fortnight ago against warm walls and fences, which may have begun to grow, should be regularly afforded water until the fruits are of full size, at which time a lesser quantity should be applied. The plants should grow to the desired height before stopping them by nipping off the point at one joint beyond a cluster of bloom. Pinch off every lateral shoot on the stems as soon as it forms, but preserve the chief foliage intact until the

fruits are fully grown, when any leaves which may be shading the fruits unduly may be reduced to half their length.

Chilis and Capsicums.—If these have been prepared as advised in former *Calendars*, they will now be good bushy plants fit for setting out. If spent hot-beds can be made use of, the plants will feel no check whatever, and having the benefit of a sunny aspect the fruits will ripen off quickly.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bickton, East Budleigh, Devonshire.

Summer Pruning.—Many gardeners still deny that surplus growth on fruit-trees should be shortened before the middle of the month of July, and some even defer its removal until August, believing that if the pruning be done so early as the middle of June, the basal buds would start into growth instead of making fruit-buds. Experience has proved that this is not so, if the work be done properly; but some gardeners cut the shoots too hard back, consequently the few buds left do start into growth. By allowing 4 or 5 inches of growth upon each shoot, such will not take place. In going over the trees, let the upper part be done first, leaving the lower half of the trees for another week, and thus prevent them from receiving too great a check all at once. These remarks apply to trees in the open as well as to those against walls, and include Apples, Pears, Plums, and Cherries. The maggot is very prevalent this season on all fruit-trees, but this pruning, or "stopping," will remove a very great number of them. All curled leaves should be examined while going over the trees, and squeezing them between the thumb and finger. If you open the leaves, the insect will be likely to let itself to the ground, unless you are very quick in securing it.

Strawberry Beds.—It is feared that this crop will be a light one in many localities, owing to the frosts during May, though it is probable that flowers that were sheltered a little by the foliage have escaped. There is promise of a heavy crop here, and the late rains having come at an opportune time. The nets should be put over the beds in good time, as sometimes the birds attack the fruits before they commence to colour. If a framework be erected over the beds to carry the net, gathering will be done much more readily, though here we place them on the plants. Such strong growers as Royal Sovereign keep the net well above the fruits. Secure the edges of the net with crooks, or the birds may get under. Half-inch square mesh netting I find the best for protecting all kinds of fruit. If mice abound, traps should be set.

PLANTS UNDER GLASS.

By J. C. TALLACK, Gardener to E. MILLER MUNDY, Esq., Shipley Hall, Derby.

Chrysanthemums.—These plants should now be in a suitable condition to be transferred to the pots in which they will flower, the exact date of repotting being not, however, of so much importance as the condition and quantity of the roots made since the previous potting, which should have formed a thin network over the side of the ball of soil; and until this is so I would defer potting, but getting the potting finished by the end of the month. Chrysanthemum specialists will have their own special mixtures of soil and manure, but thoroughly good plants, with flowers sufficiently large for all purposes, may be grown in any fairly good turfy loam, and a moderate quantity of finely rubbed horse-droppings, some lime-rubble, and sand in proportion to the nature of the loam. As Chrysanthemums will require later on a large supply of water, it is necessary that the drainage should be ample, and rightly placed so as to prevent water-logging; the size of the pots should be governed by the nature and habit of the variety grown, and for ordinary purposes anything from 8-inch to 11-inch in diameter will suffice. Late-struck plants of large-flowering varieties to be grown

for single-crown buds may be put into 7-inch pots. The condition of the soil in regard to moisture is an important point at this potting. The ball should be moist enough to obviate the necessity of affording water for several days after potting, and be in a condition to bind together without becoming pasty when rammed with the potting-stick. After potting, stand the plants close together in blocks in a sheltered spot outdoors, and compensate for rapid evaporation, if any, by frequent syringings. If aphids be present on any plant, dip the tips in tobacco-water, Abol (an excellent article), or quassia-water.

Zonal Pelargoniums.—The plants for winter-flowering may now be put into the pots in which they will flower, and if well-grown these need not be of large sizes, young stock, the only stock worth growing for this purpose, being accommodated in 6½-inch pots. Use a compost similar to that recommended above for Chrysanthemums. Pot firmly, and stand for the present in a frame, so that shelter may be given from heavy rains. At other times full exposure should be afforded.

Cape Pelargoniums.—As these plants go out of flower, they should be stood outside in the full sunshine to ripen their growth. If, however, it is wished to increase the stock, some of the best shoots should be made into cuttings, put in sandy soil, and stood in a frame till they make roots and are ready for potting.

Cannas.—The latest batch of Cannas may be potted, placed in a cold frame, and no water applied to them until the roots become active. By affording cool treatment during the summer, Cannas may be obtained in flower quite late in the season, a time at which they form a useful foil to Chrysanthemums.

General Remarks.—Artificial heat may be dispensed with in most houses, excepting where bottom-heat is required, and if carefully managed as to ventilation and early closing to confine the sunheat, many stove plants seem to benefit from a few weeks treatment without it. Of course, the advice is not intended for universal application, but serves to indicate the propriety of reducing artificial heat to a minimum.

THE FLOWER GARDEN.

By R. DAVIDSON, Gardener to EARL CADOGAN, Culford Hall, Bury St. Edmunds.

Humea elegans.—A sowing of the seeds of this fragrant ornamental plant may now be made, and another in about fourteen days. Sow the seeds in shallow, well-drained pans filled with a mixture of leaf-soil, and a small quantity of finely sifted loam and sand; cover them slightly with fine soil, and place in a cool frame. When the seedlings are large enough prick them off into small pots, and grow on in a cold frame or house in full light and with plenty of air admitted.

The Herbaceous Borders.—Neatness and cleanliness should always prevail in the borders of hardy herbaceous perennial plants, spent flowers, faded leaves, and weeds being removed once a week, and the surface stirred often with a small Dutch-hoe or a hand fork. Continue to stake and neatly tie-in all plants requiring support, doing this before the stems fall about. Large clumps of Iberis may be divested of the spent flowers with a pair of sheep-shears, cutting away also any irregular portion of the plant, and making the clumps symmetrical. The vacant spaces in these borders may be planted with Dahlias, Salvias, &c.; the former requiring stakes, which should be placed in the soil as the work of planting proceeds, and the shoots fastened thereto, so that they may not get broken or injured by the wind.

† **Carnations.**—Border Carnations and Picotees should be supported either with the newer patent wire supports, or wooden stakes of a suitable size, placing these at regular distances apart, and in the most suitable position, so as to make an effective display of the flowers when these appear. Where large quantities of Carnations are grown for cutting, the weaker flower-stalks should be removed and the strong ones disbudded, and supported with

short, well-sprayed twigs, such as the trimmings from pea-sticks, &c. The flowering of the earlier varieties of Pinks will soon be over, and layering may be commenced, a limited number of well-developed shoots at each plant being layered in a mixture of leaf-soil, finely sifted loam and sand. A number of pipings may also be dibbled in closely together in a similar mixture under a handlight, placed on a spent hot-bed, first covering the soil with ½ inch layer of silver-sand. Afford water to settle the sand round the cuttings, and shade, and keep close till roots form.

THE ORCHID HOUSES.

By W. P. BOUND, Gardener to J. COLMAN, Esq., Gatton Park, Reigate.

Oncidium ampliatum.—This fine decorative Orchid having passed out of flower, the re-potting or re-surfacing of the plants will require attention. The best kind of compost for this species consists of turfy-peat two-parts, chopped sphagnum one-part, which should be mixed together; and for drainage the Fern-rhizomes found in the peat may be employed. These materials should be pressed rather firmly together, and the surface brought up to a level with the rim of the pot. Specimens which have numerous pseudo-bulbs and growths, if the compost is worn out, or the plants extended over the sides of the pots, should be pulled to pieces before the plants have declined in vigour, the hindermost pseudo-bulbs removed, and the various divisions placed together in such a manner as to build up specimens of a serviceable size. Although this species succeeds in the Cattleya-house, the cooler part of the warmest Orchid-house suits it better. Until the growths are advanced more than is the case at the present date, and new pseudo-bulbs are formed, water must be carefully applied; afterwards it may be afforded abundantly, and as autumn approaches the quantity should be reduced, and the plants during the winter and till the flower-spikes appear, be kept comparatively dry.

Cool Odontoglossums.—A very important matter that must receive attention during this next three months, when the outside temperature is hot and dry, is to maintain as cool a temperature as possible in the Odontoglossum-house, and the air extremely humid. These conditions will be the more readily obtained by heavily shading the roof during the brighter hours of the day and opening the ventilators wide, also the door or doors, and excluding the sun's rays by tacking a piece of shading material over the doorway. Heavy overhead syringings will be likewise helpful in enabling the plants the better to withstand heat. The top, side, and bottom ventilators should be left open during the night, regulating the size of the openings in accordance with the outside temperature. The flower-spikes should not remain on the plants for long periods of time at this season, the strain on the plants being increased by a temperature of 70° or higher.

Cattleya-house.—Cattleya Skinneri and C. Lawrenceana having passed out of flower, should be kept somewhat drier till the new growth indicates renewed activity. Cattleya Gaskelliana in many cases is showing flower-sheaths, and should be afforded a light position and sufficient water till it ceases to flower. C. labiata should be making root and top-growth, and be afforded water freely, with frequent damping of the pots and slight overhead syringing on bright days. The flowering of C. Mossiae and C. Mendeli being past, the plants should be afforded water when the compost has got dry until growth begins, damping the stage between the plants so as to stimulate growth at an early date.

Inmates of the Intermediate-House.—Laelia pumila, L. Dayana, and varieties, should now be making growth, and water may be freely applied till flowering is past. Hang the plants in a well-ventilated part, syringe them freely in sunny weather, and afford them sunshine in the early morning and late in the afternoon, but protect from the sun's rays in the middle hours.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plant 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 thankfully receive and 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, JUNE 14 { German Gardeners' Society,
London, Meeting.

WEDNESDAY, JUNE 18—Royal Botanic Society's Meet.

THURSDAY, JUNE 19 { Linnean Society Meeting.
Jersey Agricultural and Horticultural Society Rose Show.

SALES FOR THE WEEK.

WEDNESDAY, JUNE 18—

Palms, Aspidistras, Bay Trees, Lilies, Japanese Dwarf Trees, &c., at Stevens' Rooms.—Valuable Freehold Land, Oatlands, St. Peter's Port, Guernsey, by Douglas Young & Co.

THURSDAY, JUNE 19—

Palms, Decorative Plants, Retarded Bulbs, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.

FRIDAY, JUNE 20—

Orchids in large variety, Retarded Bulbs, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.—Collection of Orchids, by Mr. John Cowan, Coal Exchange, Liverpool.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years at Chiswick —61°2'.

ACTUAL TEMPERATURES:—

LONDON.—June 11 (6 P.M.): Max. 63°; Min. 41°.

June 12.—Wind, S.S.W.: Dull; Rainfall none.

PROVINCES.—June 11 (6 P.M.): Max. 56°, Ipswich; Min. 47°, Dundee.

International
Plant Breeding
Conference.

THE following is the programme issued by the Horticultural Society of New York for the Conference to be held

on September 30 and October 1 & 2, 1902:—

"The Council of the Horticultural Society of New York announces that it has completed arrangements for the holding of an International Conference on Plant Breeding and Hybridisation in the fall of the present year. Acting under the instruction of the Society at its annual meeting in May, 1901, the Chairman of the Council addressed letters of enquiry to prominent scientific societies and individuals interested in progressive horticulture, both at home and abroad, to all the Agricultural Experiment Stations in America, the United States Department of Agriculture, and the Minister of Agriculture for the Dominion of Canada, in order to enlist a wide-spread support, and to ascertain views as to the most convenient date for the attendance of the majority of those interested. The responses were unanimously in favour of holding such a conference, and the dates announced were finally selected by the Conference Committee, consisting of Dr. N. L. BRITTON, Chairman; Dr. F. M. HEXAMER, J. DE WOLF, H. A. SIEBRECHT, and LEONARD BARRON, Secretary.

By the co-operation of the American Institute of the City of New York, it is arranged to hold the sessions of the conference in the Lecture Hall of the Berkeley Lyceum Building, 19—21, West 44th Street, New York City.

This conference will provide for the reading and discussion of papers, and the

discussion of special topics pertaining to the subject of plant-breeding and hybridising. Arrangements are being made for the publication of a complete report of the papers and discussions in book form under the auspices of the Society.

In connection with the conference there will be an exhibition of hybrid plants and their products, and of the related literature, to which everyone is invited to contribute. Awards of the Society in the form of Medals, Diplomas, and Certificates, may be made to exhibits of plants and plant products of hybrid origin illustrating some particular plant or plant industry.

It is further proposed to add to the interest of the gathering by making arrangements to visit points of interest in the neighbourhood; and for the convenience of visiting delegates, suitable hotel headquarters will be arranged near the Conference Hall.

The active support of the following institutions has been promised, and delegates appointed to attend the conference: Bureau of Plant Industry, United States Department of Agriculture; Department of Agriculture, Dominion of Canada; Royal Horticultural Society of England, American Pomological Society, Massachusetts Horticultural Society, Pennsylvania Horticultural Society, Society of American Florists, American Institute of the City of New York, New York Botanical Garden, School of Practical Agriculture and Horticulture, American Pharmacological Society, Torrey Botanical Club, New York Florists' Club, Colleges and Experiment Stations of the United States. N. L. BRITTON, Chairman; LEONARD BARRON, Secretary, 136, Liberty Street, New York.

Preliminary announcement of papers promised:—1. *Results of Hybridisation and Plant Breeding in Canada.* (Illustrated by specimens.) William Saunders, Director of the Central Experimental Farm, Ottawa, Canada.—2. *Notes on Plant Breeding in California.* E. J. Wickson, Horticulturist, Agricultural Experiment Station, University of California.—3. *Plant Breeding in New Jersey.* (Illustrated by specimens.) B. D. Halsted, Professor of Botany in Rutgers College, New Brunswick, N.J.—4. *The Wild Hybrids of the North American Flora.* (Illustrated by specimens of the parents and progeny.) David George, Museum Aid, New York Botanical Garden.—5. *An Address.* L. H. Bailey, Horticulturist, Cornell University, Ithaca, N.Y.—6. *Plant Breeding work in Germany.* J. C. Whitten, Horticulturist, Columbia University.—7. *Cereal Breeding in Kansas.* H. F. Roberts, Botanist, State College, Manhattan, Kansas.—8. *Recent Experiments in Hybridisation.* By C. C. Hurst, Hinckley, England.—9. *Selection versus Hybridism.* F. W. Burbidge, Dublin, Ireland.—10. *Individual Prepotency.* Will W. Tracy, Detroit, Mich.—11. *Cytological Aspects of Hybrids.* W. A. Cannon, Columbia University, New York City.—12. *Correlation Between Different Parts of the Plant in Form, Colour, and other Characteristics.* (Illustrated by specimens.) S. A. Beach, Horticulturist, New York State Experiment Station, Geneva, N.Y.—13. *Variations in Hybrids not Appearing in the First Generation, but Later.* E. S. Goff, Horticulturist, Agricultural Experiment Station, University of Wisconsin.—14. *Some Possibilities.* C. L. Allen, New York.—15. *Crossing Species of Salix.* S. W. Fletcher, Washington.—16. *Hybridising Gladiolus Species.* (Illustrated.) W. van Fleet, Little Silver, N.J.—17. *Notes on*

Breeding Hardy Apples. J. Craig, Ithaca, N.Y.—18. *The Everbearing Strawberry.* H. de Vilmorin [the late], Paris.—19. *Breeding of Native North-western Fruits.* N. E. Hansen, Brookings, S. D.—20. *The Musk-Melon.* F. W. Rane, Durham, N.H.—21. *Seedlings of the Native Plums.* E. S. Goff, Horticulturist, Madison, Wis.—22. *Results in the Breeding of Species of Ricinus.* E. Mead Milcox, Botanist, Oklahoma Agricultural Experiment Station.—23. *On Orchid Hybrids.* (Illustrated by specimens of the parents and progeny.) Oakes Ames, Ames Botanical Laboratory, North Easton, Mass.—24. *Hybrid Beans.* R. A. Emerson, Horticulturist, Agricultural Experiment Station, University of Nebraska.—25. *Hybrid Plums.* F. A. Waugh, Horticulturist, Vermont Agricultural Experiment Station.—26. *Cross Breeding of Cinchona.* H. H. Rusby, Botanist, College of Pharmacy, New York.—27. *Breeding Florists' Flowers.* (a) E. G. Hill, Richmond, Ind.; (b) C. W. Ward, Queens, L.I., N.Y.; (c) A. Wintzer, West Grove, Pa.—28. *Study of the Variations in the Second Generation of Berberis Hybrids.* C. E. Saunders, Ottawa, Canada."

OUR CORONATION NUMBER AND ITS SUCCESSORS.—We desire to call the attention of our readers to the next three numbers of the *Gardeners' Chronicle*. The Coronation Number must be published several days earlier than usual, and will comprise many features of peculiar interest at no additional cost. The following number, which must also be published some days in advance, will be devoted specially to Holland House and the Rose Show. It will contain illustrations and articles of particular interest to rosarians. The number for July 5 will be issued in the ordinary course, and will contain a full report of the show of the National Rose Show at the Temple Gardens. The publication of the half-yearly Index, and of various other matters, must necessarily be deferred. Never in the history of the *Gardeners' Chronicle* has such a derangement from ordinary routine been necessitated as in the year of the Coronation of KING EDWARD VII. Readers desirous of securing these numbers should make early application to the Publisher.

FITZROYA PATAGONICA (Supplementary Illustration).—Our supplementary illustration shows a fine specimen of this Chilean Conifer, growing in the gardens at Pencarrow, where it was planted by the late Sir WILLIAM MOLESWORTH, a keen lover of plants. It is the "Alerce" of the natives, and in Chili sometimes forms a tree 100 feet high, yielding timber much used for constructional purposes. It grows on swampy moors, and would be suitable for forestry purposes where the climate was suitable. The leaves are in threes, linear-oblong, white on the under surface. The cones are produced in great abundance, are about the size of a Pea, and bear numerous deeply-winged seeds. Mr. A. C. BARTLETT, the head gardener at Pencarrow, kindly furnishes the following particulars:—The tree is rather more than 21 feet high, and has a spread of 46 feet, and at 2 feet from the ground the trunk measures 3½ feet. It was planted in 1852 by Sir WM. MOLESWORTH, and as the photograph shows, it is a very beautiful and symmetrical specimen.

CORONATION ROSE SHOW, HOLLAND HOUSE, KENSINGTON, JUNE 24, 25.—At this show all assistants and attendants at groups shown by trade firms must wear a badge with their firm's name. There can be no exceptions made to this rule. The badge used must be the one approved by the Council, and no

other. The badge can be obtained from Mr. PINCHES, 27, Oxendon Street, London, S.W., price 1s. each.

LINNEAN SOCIETY.—On the occasion of the evening meeting to be held on Thursday, June 19, 1902, at 8 P.M., the following papers will be read:—I. Dr. W. G. RIDGEWOOD, F.L.S., on "Obesiella, a New Genus of Copepoda;" II. Mr. G. MASSEE, F.L.S., on "Modern Methods in Mycology;" III. Mr. W. P. PYCRAFT, M.A., A.L.S., "Further Observations on the Owls, especially their Skeleton."

SIR DANIEL COOPER, BART.—Everyone who was concerned with the great International Horticultural Exhibition of 1886 must have vivid recollection of the quiet persistent energy and sage counsels of Sir DANIEL COOPER, who acted as Treasurer. Of late years he had not been seen much among horticulturists, but he still retained his interest in his old associates. Sir DANIEL was born in Lancashire, and educated at University College, London. He proceeded to New South Wales in 1843, entered political life, and became the first Speaker of the Legislative Assembly of the Colony. Subsequently he took a prominent part in various philanthropic efforts, in recognition of which he was made a baronet. On returning to England, he acted as Agent-General for the Colony, and took part in various exhibitions and public functions. Sir DANIEL, who was in his eighty-first year, died on the 5th inst. By his death the survivors of the Executive Committee of the International Exhibition are reduced to five or six.

EXHIBITION AT DUSSELDORF.—A horticultural exhibition in conjunction with a congress will be held on June 27, and two following days, in the "Dome Saloon" of the Chief Hall of Industry in Dusseldorf.

THE WHOLESALE FRUIT AND POTATO TRADERS' BENEVOLENT SOCIETY.—A special general meeting of the subscribers of this society, whose president is his Grace the Duke of BEDFORD, and patrons Sir H. D. DAVIES, M.P., Sir SAMUEL MONTAGUE, Bart., and the Hon. W. F. D. SMITH, will be held at the Tavistock Hotel, Covent Garden, on Tuesday, June 17, 1902, at 6 o'clock P.M., for the purpose of electing two pensioners to pensions of 10s. per week each.

NEW PUBLIC PARK FOR LIVERPOOL.—At the monthly meeting of the City Council on Wednesday last a recommendation was adopted by 63 to 16, that the Calderstone estate in Allerton Road be purchased at a price of £43,000 from Mr. C. MACIVER, for the purpose of a public park. As the city is almost encroaching on to the suburbs, this decision will give great satisfaction to all ratepayers, and from the handsomely situated position of the garden, with its fine specimen Hollies, Yews, &c., should lend itself admirably for the purpose suggested, and prove a really good bargain. It is at Calderstone that Mr. W. TUNNINGTON, the pioneer of Chrysanthemum growing, has had charge of the estate for a large number of years, with what success visitors readily know.

THE RESTORATION OF AN AGED POPLAR.—A Danish paper reports an interesting restoration of an old tree, *Populus nigra*. The tree in question was planted in the year 1570 and has thus reached an age of more than 300 years. In 1822 it had attained its greatest height, 130 feet,* but in the year 1900 it was no more than 90 feet from ground to top. The stem on the contrary has increased constantly, and its circumference is 23 ft. at 3 ft. from the ground. As

the tree had been hurt especially through broken branches being allowed to remain, thus causing rot, a thorough restoration was undertaken. A stage, 80 feet high, was erected around the tree, all dead branches were removed, and the wounds painted with tar. Every hole was cleansed and filled with clay and cement and covered with plates of lead 1mm. thick. The main stem being about to burst in two parts, two strong iron bands, one of which weighed 470 kilogrammes, were fastened around the lower part of the two main branches. The cavity of the stem was so large as to accommodate 6 or 8 men. The interior of the stem was cleansed and the ground in it dug to a depth of 3 feet. Then 5 channels radiating from the stem were dug, every channel being 3 feet deep, 3 feet long, and 2 feet wide, was filled with beton (concrete). Then 5 channels formed a strong basis for the stem cylinder that was to be cast in the interior of the hollow stem. A strong iron beam, 12 feet long, was fastened in the interior, and then beton was filled in. Now there stands a compact mass of stone through the main stem and somewhat up into the tree, and into the two large branches. Finally the earth around the tree was dug and well manured. The subsoil being very bad, eighteen drainage pipes at the same time were put in the earth around the tree to admit air and rainwater to the roots, and to allow water being applied to the roots when wanted.

SUNFLOWER SEED-CRUSHING INDUSTRY.—In an official communication to the British Foreign Office, Mr. STERNE, His Majesty's Vice-Consul at Novorossisk, Russia, writes:—"Within the past three to four years the cultivation of the Sunflower plant for the manufacture of oil-cake has been extensively adopted by the peasantry and farmers of the district. The industry, which it would appear is very remunerative, is rapidly increasing in proportions, and promises to still further develop before very long. It is claimed that the sale of the oil-cake produced in itself more than covers all the working expenditure of the mills. The stalks of the Sunflower plant are used as fuel for driving the machinery, and the ash that remains gives from 25 to 30 per cent. of potash. Briefly speaking, it would appear that the Sunflower-seed, when properly crushed, gives the following results:—Oil, 23 per cent.; oil-cake, 40 per cent.; stalk, 37 per cent."

THE HORTICULTURAL HALL.—We learn that the council of the Royal Horticultural Society was largely occupied on Tuesday last, with the consideration of the plans for the new Hall. The apportionment of the interior space was, we believe, considered to be satisfactory, but the elevation of the façade is to be modified. In the meantime the efforts of the Fellows must be exerted to provide the necessary funds. It is more than time that a general appeal was made.

THE HORTICULTURAL CLUB.—This pleasant little Club, the social centre practically of the Royal Horticultural Society, held its bi-monthly house dinner at the Windsor Hotel on Tuesday, the 10th inst., Mr. HARRY VEITCH occupying the Chair, and some thirty odd members and friends participating. It has long been the custom of the Club to supplement its social meetings by a paper or an address on some subject of horticultural interest by a specialist, and on this occasion Mr. H. STEVENS of King Street, Covent Garden, favoured the members with an informal address on the subject of floral photography, which he illustrated by the exhibition of a considerable number of magnificent photographs taken by himself. It was really impossible to imagine greater per-

fection in the reproduction of flowers in monotypes. As Mr. STEVENS remarked, colour photography, i.e., the production of natural colours in a direct way in a positive was a dream of the future, which so far seemed utterly impracticable; but short of this, the pictures shown left absolutely nothing to be desired. The secrets, or rather one of them, appeared to be a peculiarly strict attention to sharpness in the shadows; it was in these that Mr. STEVENS always aimed at fine definition. The high lights he left to be dealt with tenderly in the process of development. It was, however, obvious, when comparing his productions with ordinary floral photographs, that many other points were in question, such as skilful posing and grouping, and judicious arrangement of background and foreground to set off the main features. One point of interest transpired, and that was that none of these fine effects were attributable to up-to-date, expensive lenses, or newly invented and highly vaunted chemicals, Mr. STEVENS adhering entirely to old-fashioned lenses and the old, well-known formulæ. The main and essential ingredient, which many amateurs forget to infuse into their work, is "brains;" and there is a vast amount of truth in Mr. STEVENS' assertion, that the best work could only be arrived at by the individual who makes an absolute hobby of the particular pursuit, and in this way infuses the one cerebral essential into the results. Mr. SHEA, himself an ardent amateur photographer, and several others, took part in the discussion, and endorsed the moral just enunciated. A very hearty vote of thanks was accorded to Mr. STEVENS, who kindly promised to give a lantern exhibition of a larger number of his productions at one of the winter meetings of the Club.

THE ROYAL HORTICULTURAL SOCIETY OF SOUTHAMPTON will hold their Rose and horticultural show on July 1 and 2; a date so soon following that of the Coronation review, that it is expected there will be an unusual number of visitors.

MESSRS. SUTTON'S GIFT TO THE TROOPS IN S. AFRICA.—An illustration before us showing the packing for despatch of useful seeds, shows the magnitude of the offering made by Messrs. SUTTON to the soldiers in South Africa. The conclusion of Peace does but make the gift more acceptable, and Messrs. SUTTON are aiding most markedly in the process of civilisation and confraternity.

THE NEW BERLIN BOTANICAL GARDEN.—The buildings of the new garden at Dahlem, with the exception of the large Palm-house, are partly finished, and the rest in course of construction. The lodgings for the botanical garden staff and the workpeople are completed, and in part inhabited. The buildings on the Dahlem chaussee, intended for the lecture-rooms and museum, will be quite finished shortly. The construction of the Palm-house, the last of the buildings to be erected, will be commenced in the course of the summer. *Gartenflora* for May 15.

THE SILVER-LEAF DISEASE.—The solution of this puzzle seems to be approaching. At the Linnean Society on Thursday, the 5th inst., Professor PERCEVAL, of Wye College, showed specimens wherein he had succeeded by inoculating in producing the disease artificially in *Pinus*. The silvery appearance is produced, as has long been known, by the separation of the epidermis from the underlying tissue, and the consequent accumulation of air between the skin and the substance of the leaf. The presence of fungous threads around the roots

* One metre = 3.281 Swedish feet.

has also long been recognised, but till now no one, so far as we know, has associated the presence of the fungous threads with the appearance in the leaf—particularly as no fungus is visible in the leaf or branches. Prof. PERCEVAL has ascertained, by cultivation, that the fungus is *Stereum purpureum*, and by inoculating the branches with the fungus from the roots, has succeeded in the course of a few weeks in producing the silver-leaf disease. As no fungous threads are visible in the leaves, the suggestion is that the effects are produced by some "enzyme" or liquid poison secreted by the fungus, which circulates and produces the effects in question.

A NEW DISEASE OF POTATOS: BACILLUS SOLANICOLA.—Dr. G. DELACROIX, Director of the Station for Plant Pathology in Paris, publishes in the *Bulletin du Ministère de l'Agriculture* (Direction de l'Agriculture, xx. year, No. 5, Paris, 1901), (1,013), his discovery of a new disease of the Potato, caused by a bacterium. This disease of the Potato, which after the month of July almost partakes of an epidemic character, attacks the haulm of the plant. At first, DELACROIX supposed it to be *Bacillus caulivorus*, discovered by himself and PRILLIEUX, but a thorough investigation proved that not to be the case. The symptoms of an attack are the arrest of development in the haulm, the yellowing of the leaves, followed by a change to pale grey, and drying up. The base of the stems often show superficial leaden-grey spots, and internally light brown-coloured patches, and these are observed at various heights. The subterranean parts of the haulm show at times healed scars, and it is at these points that the bacillus may obtain an entry. The mother tuber has been already infected, and the tubers are attacked similarly to the haulm. They appear when cut of a pale yellow tint, and later brown patches are noticed. Tomatoes are also attacked, but not often. The disease is caused by a bacterium, which moves chiefly in the cells and sap canals, which sets up the development of much brown gum and the so-called "thyllen," or cellular outgrowths. The remedies recommended are:—1, to plant the sets late, and to select perfectly healthy ones; 2, to destroy all bacteria in the soil by planting at intervals of four years; 3, and to immerse the sets for one and a half hour in a mixture of Commercial Formol 1 part, water 120 parts, before planting.

A BEAUTIFUL ROYAL BOUQUET.—Many of the bouquets worn at the recent Court were extremely beautiful, but that of the Princess of WALES surpassed them all. It was simply a shower of shaded Sweet Peas, in red, mauve, and pink, and long narrow streamers of satin ribbon in three different colours hung down and mingled with the flowers. The combination of colours was very curious—the ribbons were red, mauve, and palest green—but the result was most successful, for the red and mauve were like the flowers, and the green was the colour of the stalks.

CHARITABLE BEQUESTS.—Mr. GEORGE FERGUSON WILSON, F.R.S., of Heatherbank, Weybridge, and of Oakwood, Wisley, for many years managing director of Price's Patent Candle Company, and the discoverer of the means of obtaining pure glycerine, who died on March 28 last, aged eighty years, has left an estate valued at £58,748 gross, including personality of the net value of £50,017. He has bequeathed £1,000 to King's College Hospital, because he attended Professor DANIEL'S chemical lectures at King's College; and £1,000 to the Royal Free Hospital in Gray's Inn Road, because, as he states in his will, when he once saw a boy run over by a cart or cab, he observed how well he was attended to at that hospital.

DRAIN-PIPE OR CONDUIT, FOR USE ON GARDEN PATHS.

THE invention figured, appears to be well adapted for the purpose it is intended to serve, namely, to carry off surface water from gravel paths rapidly, and thus prevent the washing out of the gravel during heavy showers. The description of the conduit is taken from the *Building World*, and was furnished by the inventor of the patent, Mr. John W. Thompson, Coniston, Lancashire.

This invention relates to an improved drain-pipe or conduit particularly adapted for use at the sides of garden walks or drives, stables, washhouses, &c., and provides an efficient means of carrying off surface water.

In the accompanying illustrations, Figs. 1, 2, and 3 represent views in side elevation, and elevation and plan respectively, of a pipe or conduit constructed according to this invention. The pipe or conduit A is made of clay, iron, or wood, square in section, and furnished with a bottom flange B, and is provided with a circular hole C running longitudinally through it. Its ends are adapted to engage and interlock in the

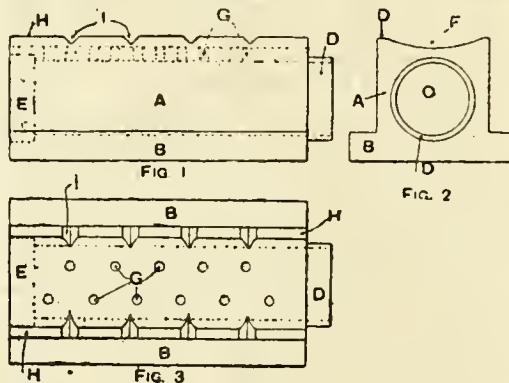


FIG. 138.—DRAIN-PIPE OR CONDUIT FOR USE ON GARDEN PATHS.

manner shown, wherein a reduced part D is formed on one end, and a recess E on the other end, so that when the pipes or conduits are laid in line the part D of one pipe enters the recess E of the contiguous pipe. The upper face of the pipe or conduit A is shaped to form a shallow channel F, and it is pierced with holes G giving access to its interior. As an alternative construction, the upper face of the pipe or conduit, or any convenient portion of the length thereof may be made as a loose detachable piece, so as to more easily provide for the removal of obstructions in the pipe or conduit. The edges H of the upper face of the pipe or conduit are provided with a series of transverse grooves I, which are adapted to guide the surface water into the outside channel of the pipe, and thus prevent the soil being washed away from the sides of the pipe or conduit.

PLANTS FOR HOUSE DECORATION.

In the present day, a great demand is made upon the resources of the garden, be it large or be it small, for plants for this specific purpose. That a large number of plants so used are spoiled goes without saying. Some of this loss is unavoidable, whilst in other cases also it is preventable. It has been proved over and over again that many plants may be grown in rooms for months at a time as well as being taken in and out for changes, either weekly or bi-weekly as the case may be. The success or otherwise depends to a large extent

upon the preparation and previous treatment, as well as upon a judicious choice of suitable subjects. On this latter point it is worthy of note that all plants with foliage of a smooth or lustrous surface will resist the somewhat unfavourable conditions better than those of a rough or pilose exterior. The *Aspidistra* is a case in point of the former, and the *Coleus* in that of the latter. Again, plants with thin or flaccid leaves, such as the *Caladium*, will not resist the dry atmosphere of rooms nearly so well as the *Ficus elastica*. Plants again that are brought direct from a humid atmosphere into a room where humidity does not exist must, as a natural consequence, feel the change; this change, too, being often aggravated by sharp currents of air, necessary beyond any question to render the atmosphere more congenial for human life, but not so for plant life (the two gases needful or most essential in either case not being the same).

Some plants will withstand a somewhat dark position better than others. Palms, as a rule, will last well in a dark situation, but on the whole Ferns will not. Overcrowding is a fertile source of injury, and in order to pack the plants together in masses, it is not an unfrequent occurrence to knock the plants out of their pots, or to lay them upon their sides, so that they soon become dry, and suffer in consequence. In this the professional decorator is the greatest sinner. He decorates for one night only, or at the most for special occasions; but even where his work is continuous, he often uses too many plants, and adopts methods that could not be continuously carried out, or be justified, where the supply has to be prepared and used from a private source alone. In order to compare town decorations, as carried out by "decorators," and the decorations as done in the country-house from the garden, every allowance must be made for the altered condition of circumstances and by the sources of supply.

Plants as grown by the large market nurserymen, and sent to wholesale centres for sale, are not always the most durable. Ferns may possibly be so, but Palms frequently are not, because oftentimes they are grown too much crowded together, in order to lengthen the petioles or leaf-stalks, as in the case of *Kentias* and *Latanias*, and of course to produce more material from a given space. The opposite is the case with Ferns; on the whole, the exposure to which they are subjected in order to produce an attractive plant just adapts them for rough-and-ready use afterwards. There is certainly one point in favour of what are termed market plants—they are as a rule well rooted; but on the other hand, they are not always well hardened off before being offered for sale. In order to produce a rapid growth, manurial stimulants are freely given, but when this is withdrawn the plants feel the loss of it, and soon commence to decline in vigour.

HINTS ON ARRANGEMENT.

It is somewhat difficult to lay down any set line or method to be followed in grouping. One object should, however, be kept in view at all times, and as far as possible—that is, what one would term characteristic grouping. By this is meant, as a case in point, such as a plant or plants of *Cordylina australis*, with long drooping foliage, do not associate with such as these anything that is of a stiff, erect growth, but rather choose such plants as *Isolepis gracilis*. Do not mix together in the same arrangement, both broad-leaved and narrow pendulous forms of

Crotons, nor broad and narrow-leaved varieties of Dracenas. In using such as *Cocos plumosus*, or the hardier variety (sp.?) *Cocos Romanzoffianus* (now known under the name of *Cocos flexuosa*), do not attempt to crowd the plant or plants with other foliage subjects totally different in their character. These tall, graceful Palms are good subjects for standing upon the floor line, and in this way their light, elegant growth is seen to advantage. They

Phoenix, the best is *P. rupicola*; this is better as a large plant in an elevated position than in any other form. Small plants of *Cocos Weddelliana* when pot-bound will stand well, and prove very effective as dot plants; but plants of *Kentias*, *Latantias*, and the like, when small, are not nearly so effective. *Aralias*, although somewhat stiff, are useful subjects, but they look best when kept below the line of vision, or when they can be looked down

able, to copy Nature. For instance, keep *Primulas* as low as possible, *Tulips* and *Hya-cinths* the same, and endeavour to make tall plants in flower serve their specific purpose.

As regards colour effect, avoid excess of mixtures; one colour alone will more often than not be the most pleasing—at the most, two that will blend together rather than produce a violent contrast. For instance, scarlet and white, although showy, are not such effective mixtures as pink and white or pink and yellow; crimson and gold or purple and gold combine well; mauve unless by itself is next to useless. When two colours are used, let, as far as possible, the lighter one predominate over the darker one. Various shades of yellow blend together well, and so do those of pink. The bronzy foliage of the Japanese Maples is most effective in combination with varied tints of yellow or with white, but not so much so with pink or scarlet or blue; pale green foliage is better with yellow tints than dark green. *J. Hudson, Gunnersbury.*

ANTHURIUM SEEDLINGS.

SIR TREVOR LAWRENCE and his gardener, Mr. Bain, have raised a large number of seedlings from several species of *Anthurium*, including *A. Scherzerianum* and *A. Andreanum*; and from time to time we have remarked upon the beauty and attractiveness of many of these, when they have been exhibited at the Royal Horticultural Society's shows in the Drill Hall. A very fine collection was exhibited at a meeting on April 22 last. Our illustration (fig. 139) shows half-a-dozen spathes of *A. Scherzerianum* type, most of them having in more or less degree the characteristics of the variety known as *Rothschildianum*, which has mottled spathes instead of the self-coloured ones of the species. Our illustration is from a photograph by Mr. Gregory.

CORONATION ITEMS.

WE expect to send 100,000 blooms each of *Pæonies*, *Gaillardias*, and *Pyrethrums* for the Coronation festivities. *Kelway & Son, Langport, Somerset.*

We all hope to do a good trade in *Roses*. The highest number I sent in Jubilee year, 1897, upon one day, was about 14,000 or 15,000, on the occasion when the Opera House was decorated with *Roses*; but I heard some time ago that it is to be done this year with artificial *Roses*, the perfume having been too overpowering in 1897. I do not know if this is true. At such times distinct colours are required, such as pink, crimson, yellow, but not mixed colours. *Geo. Mount, Rose Grower, Canterbury.*

Speaking generally, the demand for flowers will be enormous, and in particular, *Lilies of the Valley* and *Roses*. Although the *Rose* will be "the" Coronation flower, *Lilies of the Valley* will be in great demand, judging by the numerous extra orders for retarded crowns I have recently executed. *T. Jannoch, Lily Nursery, Dersingham.*

In an ordinary season we should have cut *Roses* in all shades, but owing to the cold weather in May, *Roses* are very backward, and it is doubtful, unless we get warm dry weather at once, if the *Roses* will be out in time. *Benjamin R. Cant & Sons.*

I have been asked to make contracts to supply very many thousands of *Rose* blooms, more than I shall have at that time. It is

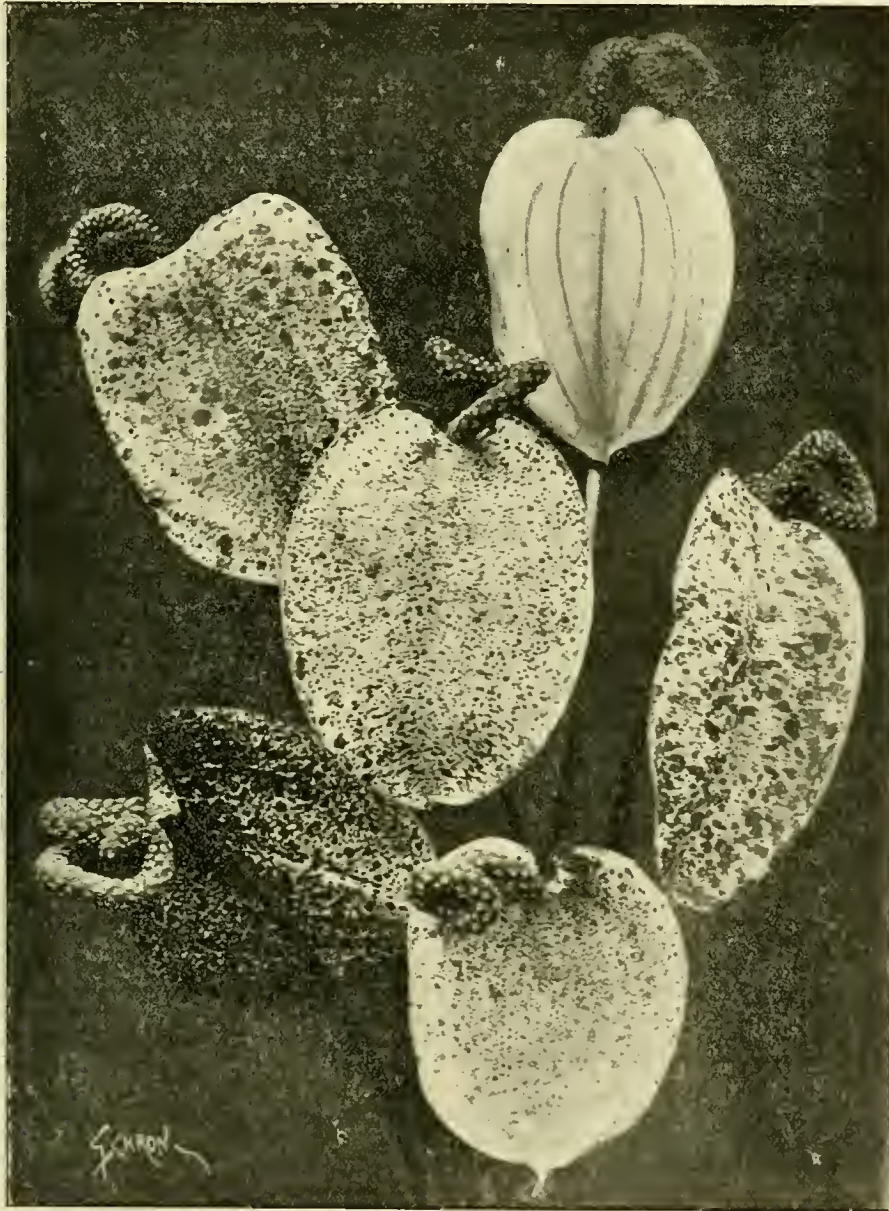


FIG. 139.—SPATHES OF SEEDLING ANTHURIUMS FROM THE GARDENS OF SIR TREVOR LAWRENCE, BART.

make good subjects for the corners of large rooms, for vestibules and staircases, either in small groups with appropriate undergrowth, say *Grevillea robusta elegantissima*, or the long, narrow-leaved forms of *Pteris serrulata*; or as specimen plants in entrance halls and corridors, where the ground space is more limited. As single specimens, the *Kentias*, amongst Palms, hold the pre-eminence; no other Palms will compare with them in contour or outline, whilst they are at the same time as enduring as any, and will thrive better in relatively small pots or tubs than any Palms grown for this purpose. Of the genus

upon. *Aspidistras* make excellent material as a groundwork to groups of *Lilies*, say, *Lilium longiflorum* for an example. *Humea elegans* in its season is a valuable plant when used in moderation; it will associate well with *Bamboos* and plants of *Cocos plumosus*. *Spiraea japonica* is better as a groundwork than in any other form; and spikes (long) of *Iris*, if so arranged as to tower above the *Spiræas*, will produce a good effect. A good stock of *Selaginella denticulata* is always useful, and will be the means of saving other and more valuable plants (successional stocks can easily be maintained). In all cases aim, as far as practic-

nothing short of a calamity to Rose growers that the season is so very late, in fact, until the rains came with the warm weather, Roses had shown no tendency to start into growth. It is very much colder here to-day, with a strong N.W. wind blowing, and not a "rosy wind." *Frank Cant, Colchester, June 6.*

We can scarcely tell what quantity of flowers will be required for the Coronation, but certainly think that Roses, Lilies of the Valley, and Carnations, will be in greatest demand. Of course the street decorations will not require natural flowers, but flags and banners and artificial flowers will be principally used. We are having enquiries from all parts of the country and from abroad from growers anxious to send flowers to London in anticipation of a very great demand, but personally I think there will be more flowers here than will warrant any high or fancy prices being made. *Frederick End, Covent Garden.*

We are supplying the Rhododendrons in Hyde Park with twelve extra ones near Stanhope Gate this year. *Anthony Waterer, Knap Hill Nursery, Woking, Surrey.*

Up to the present I have no special orders, and after my experience of the Jubilee and the Diamond Jubilee weeks, from which growers expected to reap so much benefit, I rather dread Coronation week with two public holidays in it. Up to the present, prices are below the average, but it is quite possible the demand may be better through the remainder of this month, owing to the number of people in London; but I am advising all growers to avoid the week itself as much as possible, as there is sure to be an ample supply of everything, unless it happens to be Strawberries. Outdoor Strawberries are late at present and reported to be frosted, but from what I can learn they are not so bad as was thought to be the case a week ago, and if the weather continues suitable there may be an abundance by the 24th. Some people are driving growers to disappointment, and advising them to send on a quantity of everything for Coronation week, but I leave the responsibility for that advice where it is due. *G. Monro, Covent Garden Market.*

At the Coronation time we shall be sending to the markets forced fruits of the late varieties of Peaches and Nectarines, such as Thomas Rivers, Princess of Wales, and Sea Eagle Peaches, and Victoria Nectarine; also from the cold-houses, Early Rivers Cherry. It is difficult to give any amounts; we shall send all we can, and hope for good prices. *Thos. Rivers & Son, Sawbridgeworth.*

Canada is now decorating a triumphal arch in Whitehall that promises to be one of the most effective displays that will be seen in the streets at the time of the Coronation. It is said that 20 tons of cereals and fruits have been specially brought from Canada for the purpose. The framework will be festooned with Laurel, and at the foot of each column will be a shrubbery of evergreens. Four thousand electric lights will be used to illuminate the arch at night.

ROYAL GARDENS, KEW.—We are informed that the gardens will be closed to the public on the 26th and 27th inst., so that the members of the staff may have an opportunity of witnessing some of the Coronation ceremonies. The resources of Kew will not on this occasion, as they were at the Coronation of Queen Victoria, be turned to account in the decoration of the Royal Palaces.

(To be continued.)

HOME CORRESPONDENCE.

SHREWSBURY GRAPE PRIZES.—In the *Gard. Chron.* of May 17, p. 328, Mr. Kirk tackles the subject of judging Grapes by points, and sets forth a new code which he considers simple and correct. I am sorry to differ from so experienced a cultivator and judge, but if Mr. Kirk's system were adopted I fear that the result would be confusion worse confounded. The first subject that he would consider in a bunch of Grapes is colour, for which he allows two points; the second one is finish and bloom, for this he would allow another two points. Now I always thought that it was the finish and bloom of the berries that gave the bunch its colour. If the finish is perfect, the colour will be all right, so there is no need to give extra two points for colour. I agree, however, with Mr. Kirk in thinking that there ought to be three grades of quality instead of two, as at present, but would not make the difference in value so much as he does. Say ten points the maximum for Muscat of Alexandria, nine for Black Hamburg, Muscat Hamburg, Madresfield Court, and Mrs. Pince, and $8\frac{1}{2}$ for all other varieties; and until this is done no judge is entitled to place a higher value on any one variety over another, except in the case of Muscat of Alexandria. This is an important point, and one that is too often overlooked by judges in "pointing" Grapes, the tendency being to favour certain varieties. I do not see anything amiss with the Royal Horticultural Society's code, but I think the addition of another grade on the lines indicated would be an improvement, and would simplify the work of the judges. It is immaterial, however, whether the Royal Horticultural Society's code or any other is the standard to go by; the difficulty, and what is most needed, is a simple and methodical system of arriving at the correct value of each individual bunch of Grapes, something that will supersede the present haphazard way, which, though it goes under the name of point judging, is, in reality judging by comparison. This is more a matter for judges than societies. The usual plan of judging Grapes by points and that associated by Mr. Kirk, is to begin at the bottom and go up, to add points for each quality possessed by the bunch. The system I would suggest is the opposite of this, viz., to begin at the top and come downwards, instead of adding for each quality, deduct so many points for each point that is lacking. The qualities of a bunch of Grapes might be divided into five heads, and these five heads might again be subdivided into degrees according to their importance. Making quarter point the value of each degree, suppose the first head is "Size of bunch." Well there are degrees of sizes, viz., small, medium, large, and extra large. Second head, "Shape of bunch," two degrees might be sufficient under this head. Third head, "Size of berries," here we could have four degrees, small, medium, large, and extra large. Fourth head, "Thinning," two degrees would be sufficient for this: such as berries squeezed out of shape, or too loose, and footstalks seen and not well feathered over the top shoulders, a common fault in many otherwise fine bunches. Fifth head, "Finish," as this is the most important, six quarters, equal to one-and-a-half points, might be the full value here. To give an example of how this system would work, you come to a bunch, and instead of saying "How much is this worth? Shall we say seven?" no matter how miserable the specimen may be, credit it with the maximum number of points allowed. Then begin with all your might to tear it to pieces—so to speak, picking out all its faults. For instance, begin with the first head, if a small bunch put down three-quarters against it, if medium one-half, if large one-quarter, if extra large it loses nothing under this head. The same with the next head, "Shape of bunch," if only a fair shaped specimen, put down one-quarter, if badly shaped one-half against it. The next head, "Size of berry," if extra large, no marks;

large, one-quarter; medium, two-quarters; small, three-quarters against—and so on with the other heads, adding all the quarters against it, and deducting this from the maximum gives you the correct value of the bunch. The bunch that can come best through this methodical fault-finding will receive most points, and if faultless it gets the greatest possible, but this is, or ought to be, a very rare occurrence. By some system such as this, the very common mistake of beginning to point too high is avoided. *D. B.*

THE DEODAR.—In the *Report of the Conifer Conference*, issued by the Royal Horticultural Society in 1892, I find that the "Cedrus Deodara" ranges from Afghanistan to Nepal. Some trees are 30 to 40 feet in girth, and up to 200 feet in height. They fringe the eternal snows, and there grow out of rocks." The natural habitat of this interesting Conifer would then appear to be the region of the eternal snows, 20,000 feet or so above sea-level. Yet, strange to say, this same Conifer flourishes at Worthing, almost at the level of the sea! I once heard an old and noted gardener say that he did not believe in acclimatization of plants. What is this but acclimatization, through the seed of a tree growing naturally at a very high altitude, and eventually establishing itself at so low a level close to the sea? In front of my house there is a Deodar in the middle of three roads, but it is stuck against an evergreen Oak. There are several others in my vicinity in private gardens. The other day I passed a house in the front garden of which there was a fine Deodar; it was perhaps not more than 30 feet above high tide. I have two young Deodars in my garden about 10 feet high, and they are in a very flourishing condition. This Conifer requires shelter from the south-west gales, otherwise the sea air and low level are no obstacles to its perfect growth. I have never met with the history of its introduction to the British Isles, and from what altitude the seeds were originally obtained. It would be interesting to obtain seeds or cones from a tree growing on the fringe of the eternal snows, and sow them directly in various parts of the British Isles, to ascertain whether the resulting trees would live and flourish after such a sudden transition. It is possible that the original seeds were obtained from a much lower level in the Himalayas, for it flourishes at Mussooree, which is situated on the lower ranges. I often tried to grow it in Lucknow, but never succeeded in getting it to live; probably the seed was obtained from too high an altitude. Had I tried seed of the acclimatized plants of England, I might have succeeded; although the hot winds of May and June might even then have been inimical to it. The Deodar must have been known, somehow, to the Assyrians, as it is quaintly delineated on their monuments as an object of veneration. I do not know any Conifer so picturesque as the Cedrus Deodara in its young stages, such as those in the Royal Gardens of Kew. The Lebanon and Atlantic Cedars, with their rigid branches, are, I think, not half so beautiful. *E. Bonavia, M.D.*

A HOLLAND PARK MEMENTO.—I have ventured to suggest to some fellow members of the Royal Horticultural Society's Fruit Committee, that it would be a very pleasing form of memento of the Holland Park Rose show and Coronation horticultural gathering, were all the members of that body present on the 24th inst., to assemble and be photographed. Perhaps other committees might like to do the same. I do know that a well-known habitué of the Drill Hall, Mr. Gregory of Croydon, would be pleased to take the pictures. I can but think that many members of each committee would like to have for preservation such a memorial of their membership of the meeting for the first time in historical Holland Park, and not least of the Coronation year. I have no doubt but that special efforts will be made by every member to be present on so auspicious an occasion. *A. D.*

SOCIETIES.

ROYAL HORTICULTURAL.

JUNE 10.—The Drill Hall, Buckingham Gate, Westminster, was well filled with exhibitors on Tuesday last, when an ordinary fortnightly meeting of the Committees was held.

There were numerous Orchids, and the ORCHID COMMITTEE recommended two Awards of Merit to novelties.

The exhibits before the FLORAL COMMITTEE included a number of groups of hardy flowers, excellent displays of Gloxinias, Begonias, Carnations, and other plants. The Floral Committee recommended one First-class Certificate, and eight Awards of Merit.

The FRUIT AND VEGETABLE COMMITTEE had but few exhibits before them, but an Award of Merit was recommended to a new Melon.

In the afternoon there were 170 new Fellows elected to the privileges of the Society. The names were read over by the Rev. W. WILKS, M.A. (Secretary), and his assistant, alternately; the enumeration of so large a number caused a little amusement. It is believed that in no period of the Society's existence have so many new Fellows been elected in one day.

The LECTURE was one by the Hon. Mrs. BOYLE, upon "Weeds of the Garden," and the paper was read by the lady herself.

Floral Committee.

Present: W. Marshall, Esq., Chairman; and Messrs. C. T. Druery, Geo. Nicholson, R. Dean, J. F. McLeod, G. Reuthe, R. W. Wallace, Chas. Dixon, Jno. Jennings, Jas. Hudson, J. W. Barr, R. C. Notcutt, W. Howe, Chas. Jeffries, Geo. Gordon, C. J. Salter, F. Page Roberts, H. J. Jones, Chas. E. Shea, E. H. Jenkins, W. J. James, Chas. Blick, Geo. Paul, Ed. Mawley, and J. Fraser.

Mr. H. J. JONES, Ryecroft Nursery, Hither Green, Lewisham, showed a half-dozen fine plants of a very good variety of *Astilbe japonica* named Lord Salisbury.

A group of plants of herbaceous *Calceolarias* from PERCY R. DUNN, Esq., Brockley Park, Forest Hill, was awarded a Bronze Flora Medal. The plants were of moderate size and the flowers exhibited very bright colours.

Messrs. JNO. LAING & SONS, Forest Hill Nurseries, London, S.E., exhibited a group of plants containing *Caladiums*, *Codiaeums*, and *Streptocarpus*. The *Caladiums* exhibited capital colour, especially such varieties as *Flammant Rose*, *Botafogo*, F. D. Moore, Baron A. de Rothschild, &c. Some of the prettiest varieties amongst the *Codiaeums* were *Prince of Wales*, *Reedii*, and *Aigburthensis*. The *Streptocarpus* had very large, fine flowers.

Erica translucens, as shown by Messrs. W. CUTBUSH & SON, is a very distinct and pretty *Erica*, with rather slender, silvery-purple or rose-coloured flowers.

Mr. ROBERT GREENFIELD, JRN., Ranelagh Nurseries, Royal Leamington Spa, exhibited plants of an *Asparagus* named A. Greenfieldi. The plants resembled those of A. retrofractus, but the growths were rather stronger and of less length.

Messrs. J. CANTER & CO., High Holborn, London, exhibited a group of very choice plants of *Gloxinia* seedlings, in which self-coloured, bicoloured, and spotted varieties were well represented, the colours being very brilliant.

Messrs. PAUL & SON, The Old Nurseries, Cheshunt, had sprays of such ornamental-leaved and flowering shrubs as *Quercus Concordia* (golden-leaved), *Weigela alba*, *President Duchatre*, *Van Houttei*, and *candida*; several very pretty *Lilacs*, including the fine double white *Madame Lemoine*; *Aesculus carnea* and *Briottii*, *Pyrus Aria aurea*, *Viburnum Opulus aurea variegata*, *V. oxycoccus*, *Fagus purpurea bicolor*, &c.

A pretty variety of *Pyrethrum roseum* named Pink Pearl was shown by Messrs. LAXTON BROTHERS, Bedford.

A striped *Petunia* named Silver Star was shown by Messrs. COOPER, TAVER & CO., 90, Southwark Street, London, E.C.

From the Garden of LEOPOLD DE ROTHSCHILD, Esq., Gunnerbury House, Acton, Mr. HUDSON exhibited fine branches of flowers of the new Rose, *Conrad F. Meyer*, (R. rugosa hybrid). These were from the open ground, where the plants had been afforded no protection. This Rose was given an Award of Merit last year on June 4.

H. F. PITT, Esq., Rosslyn, Stamford Hill, N. (gr.), Mr. W. Noble, exhibited a very fine lot of *Gloxinias*, excellent in strain, and exhibiting good cultivation.

Messrs. W. CUTBUSH & SON, Hithgate Nurseries,

London, N., had a group of plants on the floor near the doors, in which were very fine Carnations, including some of the choicest varieties of the *Souvenir de la Malmaison* type, as *Monk*, rich red colour; *Nell Gwynne*, white; *Churchwarden*, rosy-crimson; *Lady Rose*, rich pink colour; *Maggie Hodgson*, deep crimson; *Lord Welby*, bright red, brightest of all; *King Arthur*; and several tree varieties were shown in good condition, including a *Germania*. Thirty spikes of *Eremurus himalaica* were grouped over a groundwork of cut flowers of *Pyrethrum roseum* (Silver-gilt Flora Medal).

Mr. C. TURNER, Royal Nurseries, Slough, exhibited a plant of a border Carnation named *Manxman*, a glorious flower $3\frac{1}{2}$ inches across, colour cherry-scarlet.

Mr. MARTIN R. SMITH, The Warren, Hayes, exhibited six plants of a yellow seedling Carnation of the *Souvenir de la Malmaison* type, and named *Sunray*.

Messrs. JOHN PEED & SONS, Roupell Park Nurseries, Norwood, exhibited a group of cut flowers of hardy species, a very miscellaneous collection. A pan contained plants of *Gypsophila cerastioides* in bloom, a species growing about 3 inches high, having numerous white flowers $\frac{1}{2}$ -inch across, with three forked stripes of red on each petal.

Messrs. DONNIE & CO., Rothesay and Orpington, exhibited a group of cut flowers of the fragrant hybrid *Aquilegias*, also blooms of choice varieties of fancy *Pansies* from plants grown at Orpington, where they were put out in the open border in March. These fancy *Pansies* were remarked upon in our last issue.

Mr. T. S. WARE, Ltd., Hale Farm Nurseries, Feltham, exhibited a group of hardy flowers, in which varieties of *Pyrethrum roseum* were conspicuous, also flowers of the very large *Campanula*-like *Ostrowskia magnifica*, *Incarvillea Delavayi*, &c. The various *Iris paradoxa* was shown as a plant in flower (Silver Flora Medal).

Messrs. R. WALLACE & CO., Kilnfield Gardens, Colchester, had a group of choice plants and cut flowers. Several species of *Brodiaea* were shown, including *B. laxa*, *B. candida*, *B. capitata*, and *B. Douglasii*. A fine mass of *Incarvillea Delavayi*, many *Lilacs*, as *L. excelsum*, *L. longiflorum giganteum*, *L. Krameri*, *L. odorum*, the pretty yellow-flowered *L. monadelphum*, &c. Varieties of *Iris sibirica* were very pretty, as *I. s. George Wallace*, of large size and deep in colour; *I. s. alba maxima*, a considerable improvement upon the variety *alba*; also numerous and choice varieties of *Iris Germanica* and *Calochortus* (Silver Flora Medal).

Messrs. KELWAY & SON, Langport Nurseries, Somerset, had a large and gay exhibit of varieties of *Pyrethrum roseum* and tree *Paeonies*. The colours of the single and double flowered *Pyrethrums* were extremely varied. Among the double we noticed the following prominent varieties, *Mdlle. Van Houtte*, white, tinted with mauve; *Chamois*, bronzy-pink; *Ernest*, crimson; *Rembrandt*, dull crimson; *Meteor*, rosy-crimson; *Wega*, and *Princess Beatrice*. Among the large number of single flowers, were *Lady Smith*, crimson; *Princess Irene*, white; *Princess Marie*, white; *Comet*, crimson, &c. (Silver Flora Medal).

Messrs. GEO. JACKMAN & SON, Woking Nursery, Surrey, showed a pretty exhibit of hardy plants in flower, such as *Aster alpinus*, *Epilobium obovatum*, a North American species with bright mauve coloured flowers; *Edraianthus dalmaticus*, *Incarvillea Delavayi*, *Cypripedium spectabile occidentale*, &c., *Orehis foliosa*, *Heuchera sanguinea*, *Dianthus Atkinsoni*, with brilliant crimson flowers, &c.

Mr. M. PRITCHARD, Christchurch, Hants, exhibited a grand lot of hardy flowers, in which varieties of *I. sibirica* and other species were prominent; also many showy *Papavers*, *Pyrethrums*, &c. (Silver Flora Medal).

Mr. AMOS PERRY, Hardy Plant Nursery, Winchmore Hill, London, N., was another exhibitor of hardy flowers, showing finely cultivated specimens. A strongly grown plant in a pot was noticed of *Ostrowskia*. There were fine masses of the blue flowered *Ixolirion tartaricum*, and gorgeously coloured varieties of *Papavers*, &c. (Silver Flora Medal).

Mr. E. POTTEN had a collection of hardy flowers, including *Lilacs*, *Weigelas*, *Pyrethrums*, &c.

Messrs. BARR & SONS, King Street, Covent Garden, London, in the midst of a collection of hardy flowers included a few Japanese dwarfed trees. Amongst the hardy flowers was *Iris paracina*, a hybrid between *I. paradoxa* and *I. sambucina*. The flowers have purple standards, and the falls are reticulated white over purple ground; they are very pretty. *Eremurus himalaicus*, double *Pyrethrums*, *Troilus japonicus* fl.-pl., *Paeonies*, *Papavers*, &c., were included (Silver Banksian Medal).

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, made a grand display of flower spikes of *Eremurus*, there being about 100 specimens, some of the best of the *E. robustus* varieties having $3\frac{1}{2}$ feet length of flowers, all of the spikes were of unusual strength. Five species and varieties were represented, consisting of *E. himalaicus*, *E. robustus*, *E. robustus Elwesianus*, *E. Olga*, and the yellow-flowered *E. Bungei*. The two last-mentioned weaker-growing species were shown as plants in pots. The whole group had a groundwork of flowers of herbaceous *Paeonies*. A further exhibit from Messrs. J. Veitch & Sons included 140 plants of *Gloxinia* in extraordinary good condition and fine flower. Most of the plants were in 5-inch pots, and many of them had sixteen beautiful flowers upon them. The self-coloured flowers and the bi-coloured, or edged flowers, were mixed with a quantity of spotted and netted varieties, all of them of very fine merit. A quantity of plants in pots of the lovely blue-flowered *Solanum Wendlandi* were very attractive, also a number of plants of the yellow-flowered *Primula imperialis* (Gold Medal).

Messrs. H. CANNELL & SONS, Swanley, Kent, exhibited a group of fine tuberous-rooted *Begonias*, with double flowers. Some of the best were, *Calypso*, pink; *Lady Wolverton*, pink, with white centre; *A. G. Hubbuck*, orange-scarlet; *Lord Chelsea*, crimson; *Countess of Lytton*, white; and *Lady Griffiths* (Silver Flora Medal).

Mr. CHAS. TURNER, Royal Nurseries, Slough, had a group of Carnations in pots, composed of choice varieties of the *Souvenir de la Malmaison* type, and of the Tree type (Silver-gilt Flora Medal).

Messrs. PAUL & SON, the Old Nurseries, Cheshunt, exhibited some fine plants in pots of hybrid *Rhododendrons*, of R. Fortunei. Duke of York, Duchess of York, both of them shades in rose-pink, have received Awards of Merit; and there were several unnamed seedlings of merit.

Messrs. HUGH LOW & CO., Clapton, and Bush Hill Park Nurseries, Enfield, exhibited a group of Carnations in pots, the quality and size of the flowers being very marked. Such "*Malmaison*" varieties as *Lord Roberts*, *Churchwarden*, *Trumpeter*, &c., were capital; and of other sections, *Cecilia* was shown well. There were also blue-flowered *Hydrangeas* *Hortensia*, and pretty specimens of *Tremandra verticillata*, &c.

Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley, had a collection of sprays of hardy trees and shrubs, such as *Quercus purpurea*, a good purple-leaved Oak; *Pavia flava*, *Cytisus Andreanus*, *Weigelas*, *Lilacs*, *Crataegus Oxyacantha punica*, *Rhododendrons*, &c.

Mr. W. MILLER, landscape gardener, Berkswell, Coventry, exhibited three plans, one showing in colours the gardens at Coombe Abbey, Earl Craven's fine seat near Coventry; another which he sent in competition to the Paris Exhibition of 1900. The central portion or parterre in this plan was the subject of a much more ambitious treatment than was indicated in the competitive plan, and which was one of those shown on Tuesday at the Drill Hall. The component details were greatly elaborated, whilst preserving its boundary lines. The chief and prettiest features were six panels, each filled with graceful scroll-work, intended to be planted with bedding-plants, either floral or foliage; and four other panels were otherwise dealt with, the whole being very ornate in design, and would be pleasing in aspect when finished. One peculiar feature was the narrow turf paths, which ran down the centre of the paths formed of gravel, so that the pedestrian had the choice of turf or gravel upon which to walk. The plan of Coombe Abbey shows the gardens and grounds of 50 acres in extent, as they exist at the present day, with the exception of a few minor features, and well indicate the wealth of trees and shrubs to be found there, and their varied and effective arrangement. If the landscape gardener has erred, it is in the excessively ornate character of his work, in his planting of trees of large size by the side of every path and road—a mistake in our rainy climate, when every gleam of sunshine should be enjoyed. Moreover, he will not let us have a glimpse of Nature in the rough as a foil to the all-pervading ornamentation. Mr. Miller was for a period of about forty years in charge of the gardens at Coombe Abbey—long enough, therefore, to see the gradual and persistent carrying out of all his plans.

Awards.

Beech, Paul's Gold Margined.—A very effective variegated variety, in which the centre of the leaves is green, and the margins rich yellow. It appeared

amongst seedlings of the common Beech at Cheshunt. From Messrs. PAUL & SON (Award of Merit).

Begonia Exquisite.—A very beautiful double-flowered tuberous-rooted variety. Flowers salmon-rose colour, with nearly white centre, each petal very prettily fringed at margin. From Messrs. H. CANNELL & SONS (Award of Merit).

Carnation Lady Herford.—This is a magnificent variety, shown by MARTIN R. SMITH, Esq., The Warren, Hayes, Kent (gr., Mr. C. Black). The flowers were $3\frac{1}{2}$ inches across, of excellent form, very full, and of a charming shade of salmon-rose colour. The "grass" was very strong, and the growth vigorous (Award of Merit).

Fuchsia triphylla hybrida.—This is a very brilliant hybrid Fuchsia, from a cross between *F. triphylla* and *F. fulgens*. The flowers are very slender, and considerably longer than those of the orange-scarlet coloured *F. triphylla*, being at least $2\frac{1}{2}$ inches long; they are crimson in colour. The leaves are very deep green colour, with reddish stems and petioles, and are occasionally, but not often, produced in threes, as those of *F. triphylla*, shown by LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton (gr., Mr. J. Hudson), and by J. T. BENNETT-POE, Esq., Holmewood, Cheshunt (gr., Mr. Downes), who had a very fine plant, and in addition a spray of flowers of *F. triphylla* (First-class Certificate).

Heuchera brizoides var. gracillima.—A variety with flower spikes about 18 inches high, colour rose. From Messrs. WALLACE & CO. (Award of Merit).

Iris Sarpedon.—A very fine Iris of the Germanica type, with azure-blue coloured standards, and rich purple falls, with yellow hairs; a magnificent and bold flower. From Mr. G. YELD, Clifton Cottage, York (Award of Merit).

Corydalis thalictroides.—A few plants of this new species from China were shown by Messrs. JAS. VEITCH & SONS. They had been grown in a cool-house, under which conditions the plant is described as being a "perpetual bloomer." The plants were of very slender growth, and as drawn up to stakes were about 1 foot high with the flowers. The leaves have some resemblance to those of a *Thalictrum*, and have five deeply cut segments, being light green in colour. The flowers are yellow, and borne upon racemes several inches long. The plant would make a very pretty species for the rockery (First-class Certificate).

Marguerite "Coronation".—A fine group of plants was shown by Messrs. WARD, BROS., Oak House, Enfield Road, Southgate, of a variety of *Chrysanthemum frutescens*, in which a portion of the disc florets have become tubular, just as in the case of *Anemone*-flowered *Chrysanthemums*. The blooms were $2\frac{1}{2}$ inches across, and the variety, which originated in the nursery as a sport in 1900, is a distinct novelty (Award of Merit).

Orchid Committee.

Present: Henry Little, Esq. (in the Chair); and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshaw, F. W. Ashton, H. Ballantine, W. A. Bilney, J. Charlesworth, J. Colman, W. Cobb, J. Douglas, E. Hill, A. Hislop, G. F. Moore, H. T. Pitt, H. M. Pollett, F. Rehder, H. A. Tracy, W. H. White, and W. H. Young.

H. T. PITT, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood), again arranged one of his very fine groups of Orchids, in which the excellence of the blotched forms of *Odontoglossum crispum* was, as usual, a telling feature, and for which a Silver-gilt Flora Medal was awarded. The centre of attraction was the superbly blotched and finely formed *Odontoglossum crispum* Pitmanum; and other fine forms were *O. c. Lady of the Lake*, *O. c. Curiosity*, a pretty flower approaching *O. c. Lowii*, and with some purple spots inside the slightly incurved margin of the petals; *O. c. Purity*, *O. c. corona*, *O. c. Perfection*, *O. c. Alexandra Regina*, all good and distinct. Other plants noted were *O. nebulosum* excellens, *O. Rossi majus*, *O. Hallii* varieties, *O. Hunnewellianum* sceptrum, and other *Odontoglossums*. The pretty and singular species comprised the feather-lipped *Bulbophyllum barbigerrum*, a fine *B. Lobbii*, *Platyclinis filiformis*, with many elegant little racemes of yellow flowers; *Epidendrum* (*Nanodes*) *Medusa*, *Cymbidium tigrinum*, *Chondrorhyncha* *Chesler-toui*, *Zygopetalum* *Klabochorum*, *Promenaea* *eltrina*, *Dendrodium revolutum*, and other species; also effectively and well shown in the group were plants of *Anguloa Clowesii*, *Laelia tenebrosa*, *L. purpurata*, *C. Mossiae*, and *C. Mendeli*, all in good variety; *Laelio-Cattleya* \times *Hippolyta*, *L.-C. \times* *Canhamiana*, *Cypripedium* \times *Swainianum*, *C. Chamberlainianum*, *C. callosum* *Sanderæ*, *C. \times* *Wiertzianum*; *Dendrobium* *Falconeri giganteum*, *D. Deari*, varieties of *Miltonia*

vexillaria, *M. Phalaenopsis*, and *M. Roezli*; *Odontoglossum citrosimum*, *Cattleya intermedia* *Parthenia* *Rosslyn* variety, and *Thunia Marshalliana* and *T. Bensoniae*.

Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), was awarded a Silver Flora Medal for an excellent group, at one end of which was a choice collection of forms of *Cypripedium bellatulum*, including two of the pure white variety, parts of the original plant; six plants of the white-lipped *C. Godefroyae leucocheilum*, a good plant of *C. callosum* *Sanderæ*, and other *Cypripediums*. At the back of the group the *Thunias* were effectively arranged with *Laelia purpurata*, varieties of *Cattleyas*, of which one of the prettiest was *C. Mossiae* Mrs. Egerton Grey, and *Laelias*. In the centre was a fine specimen of *Epidendrum prismatocarpum*, with many spikes; *Laelia majalis* were well flowered; *Odontoglossum crispum* were well represented, the two most distinct being *O. c. Albion*, a fine pure white, and *O. c. marmoratum*, with the segments tinged and blotched with claret colour; several *O. \times* *Adrianæ*, and other *Odontoglossums*, *Masdevallia Carderi*, *Cochlidia Noezliana*, a fine *Oneidium* *Forbesii*, *Eria acervata*, *Maxillaria vitellina*, *Cymbidium tigrinum*, &c.

Messrs. JAS. VEITCH & SONS, Chelsea, were awarded a Silver Banksian Medal for a compact group of their showy hybrids, principally of *Laelia* and *Cattleya*, among them being three examples of the fine *Laelio-Cattleya* \times *Aphrodite alba*, and one of the dark variety; two of the equally showy *L.-C. \times* *Canhamiana*, and good specimens of *L.-C. \times* *Wellsiana*, *L.-C. \times* *Hippolyta*, *L.-C. \times* *Lycias*, *Cypripedium* \times *Euryale*, *Epi-Laelia* \times *Charlesworthi*, *Epi-Cattleya* \times *matutina*, some good *Odontoglossum crispum*, and a plant of the small and pretty *O. Wallisii*.

Messrs. STANLEY, ASHTON & CO., Southgate, were awarded a Silver Banksian Medal for a good group, in which the two best plants were *Odontoglossum* \times *lochristyense nobiliss*, a large pale yellow flower, heavily blotched with red-brown, and *Cypripedium* \times *A. de Lairese*, a fine hybrid of *Rothschildianum* and *Curtisii*. The group was composed principally of good *Odontoglossum crispum*, *O. \times* *Adrianæ*, good examples of their fine strain of *Cattleya Mossiae*, *C. Mendeli*, *Laelia Digbyana*, *L. purpurata*, and other showy *Orchids*.

Messrs. B. S. WILLIAMS & SON, Holloway, staged a group in which were some good *Laelia purpurata* and *Cattleya Mossiae*; also *Laelio-Cattleya* \times *cinnabrosa*, *Laelia tenebrosa*, *Zygopetalum* *Dayanum*, *Thunia alba*, *Miltonia* *vexillaria*, *Cologyne* *Massangeana*, and various *Cypripediums*.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr., Mr. Gilbert), showed a strong plant with two flowers of the richly coloured *Cypripedium Lawrenceanum* Hackbridge, the dorsal sepal of which is suffused with purplish-rose over almost the whole surface, the rest of the flower being richly coloured; and *C. Lawrenceanum* *Colossus*, a large variety with white dorsal sepal bearing purplish lines.

J. T. BENNETT-POE, Esq., Holmewood, Cheshunt (gr., Mr. Downes), showed a fine specimen of a beautiful variety of *Cattleya Warscewiczii*, with two spikes of three and four flowers respectively.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr., Mr. Davis), showed a fine specimen of *Cypripedium callosum* *Sanderæ* with four flowers.

Mr. H. A. TRACY, Twickenham, showed a small collection of beautiful varieties of *Cattleya Mossiae*, including the true pure white *C. M. Wageneri*, with four flowers; *C. M. Arnoldiana*, white, with purplish blotch on the lip; *C. M. Reineckiana*; *C. M. delicata*, a pretty bluish-white with no dark colour on the lip; and *C. M. Tracy's* variety a fine flower, white with a decided bluish tint over the whole, the colour on the lip being slatey-blue. It is a delicately tinted and distinct variety.

A. WARBURTON, Esq., Vine House, Haslingden, sent an inflorescence of the noble *Odontoglossum crispum* *Luciani* which always causes admiration whenever it is seen, the present form of the flower presenting it at its best. The large flowers are heavily tinged with purple at the back and blotched with claret-purple on the front. We have several times referred to this magnificent variety in the *Gardeners' Chronicle*. It was given a First-class Certificate when shown by Messrs. LINDEN, March, 1897, and was illustrated in company with its beautiful companion *O. c. Lindeni*, in the *Gardeners' Chronicle*, April 24 of that year.

Messrs. HUGH, SON & CO., showed a very large and beautiful form of *Cattleya Mendeli*, and other *Orchids*. The Rev. FRANK MASON, The Firs, Warwick, showed

two distinct forms of *Cattleya Mossiae*, the one with petals variegated with purple on rose colour.

Mrs. HAYWOOD, Woodhatch Lodge, Reigate (gr., Mr. C. J. Salter), showed *Odontoglossum crispum* *Distinctum*, a good white flower.

JEREMIAH COLMAN, Esq., Gatton Park (gr., Mr. W. P. Bound), showed a good plant of *Lycaste brevispatha*, more often called *L. Lawrenceana*; and *Odontoglossum crispum* *Gatton Park* variety, a fine purple-tinted flower.

Awards.

AWARD OF MERIT.

Laelio-Cattleya \times *Mabel* (*C. Trianaei* \times *L. fenebrosa*), from H. S. LEON, Esq., Bletchley Park (gr., Mr. A. Hislop).—A fine flower with sepals and petals equal to those of *C. Trianaei*, and of a rose tint suffused with a bronzy hue. Lip rose coloured with dark purple veining in front.

Cattleya labiata *Warneri*, *Little's variety*, from HENRY LITTLE, Esq., Baronshalt, Twickenham (gr., Mr. Howard).—A very fine form of the handsome, summer-flowering *Cattleya* generally called *C. Warneri*. Sepals and petals dark rose; front of the well-expanded lip intense crimson-purple.

CULTURAL COMMENDATION.

To Mr. W. H. White, gr. to Sir TREVOR LAWRENCE, Bart., for a grand specimen of *Cattleya labiata* *Mossiae*, with about forty-eight beautiful flowers, so densely arranged that the leaves were only here and there visible. The whole plant was of the same mass and variety, and formed a fine example of cultural skill.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq., Chairman; and Messrs. Henry Eslings, W. Bates, S. Mortimer, H. J. Wright, Geo. Kelf, W. Fyfe, H. Markham, Geo. Reynolds, F. Q. Lane, James Smith, A. H. Pearson, and H. Balderson.

Some baskets of excellent Grapes as packed for market were shown by Mr. J. HODGES, Rusper Vineries, Fyngate. The varieties were *Gros Maroc* and *Black Hamburg*, and all were very finely finished. About 40 lb. were shown (Silver Knightian Medal).

A green-fleshed Melon named Golden Wedding, shown by Mr. J. VERT, Audley End Gardens, Saffron Walden, was not given an award. The fruit had very deep flesh, but was not of particularly good flavour.

LEOPOLD DE ROTHSCHILD, Esq., exhibited thirty fine fruits of Lord Napier Nectarine, obtained from a trained tree which has borne a crop of 100 fruits. Also dishes of ripe fruits of the following Plums:—Count Althann's Gage, Early Transparent Gage, and Jefferson (Silver Banksian Medal).

Awards.

Melon President (Royal Favourite \times Westley Hall).—This is a very deeply netted, scarlet-fleshed fruit, with moderately deep flesh, and exquisite flavour. Shown by Mr. W. Ingram, gr. to R. BURRELL, Esq., Westley House, Bury St. Edmunds (Award of Merit).

Scientific Committee.

JUNE 10.—*Present*: Dr. M. C. COOKE (in the Chair); and Messrs. Odell, Saunders, Douglas, Veitch; Drs. Müller Masters, and Rev. W. Wilks.

Pear leaves.—Mr. SAUNDERS reported that the leaves submitted to him were attacked by the Pear-mite, *Eriophyes pyri*.

Fusarium Solani.—A letter was read from Professor PERCEVAL in which he stated that he had proved experimentally that healthy Potatoes could be affected by this fungus.

The Narcissus-fly.—Rev. W. WILKS showed specimens of the perfect insect, *Merodon*, which he had reared.

Diseased Fig.—A specimen was exhibited, and referred to Dr. COOKE for report. No fungus was visible, and the appearance was consistent with some check to growth.

Iris, overgrowth of.—Miss E. COCKER sent specimens of *Iris squarrel* which had apparently grown too fast and too vigorously, and in which in consequence the stems had snapped across as from some injury.

Moth on Pear.—Mr. BERRY sent specimen, which was referred to Mr. SAUNDERS for report.

Tomatos.—The same gentleman also sent specimens of diseased Tomato-stems in which no fungus was visible.

Apple-leaves crippled.—Mr. GETTING, of Ross, showed Apple-leaves puckered, and of a deep green colour. No aphid or fungus was visible. The specimens were submitted to Dr. COOKE for future examination and report.

Tomatos.—Mr. LUMSDEN sent specimens of some grubs found in the stem of a Tomato, and which will be reported on later.

Cauliflowers.—Mr. C. HOOPER sought information as to the reason why certain Cauliflowers on his farm were all good, whilst others in another situation failed to form a "curd." Without further particulars, it was not possible to give a satisfactory explanation.

Insect Injurious to Apple Graft.—In reply to a question from Mr. DUNLOP, of Armagh, the following letter was read from Mr. SAUNDERS: "The beetle you sent to me the other day, said to be the cause of injury to Apple grafts at Loughall, Co. Armagh, belongs to the weevil family, and is known as the "Brown leaf weevil;" its scientific name is *Phyllobius oblongus*. It is a well-known pest, feeding on the leaves and buds of various fruit-trees; but I can find no record of its feeding on the bark. It is said to be particularly fond of attacking grafts, and if it will feed on the buds, I can see no reason why it should not also feed on the bark, particularly when it is young and tender. It is recommended that the grafts should be smeared with grafting wax or clay, to keep the insects away; but I feel uncertain whether this would not be prejudicial to the graft. These beetles can fly very well, but on a dull morning they might be shaken from the trees on to a white sheet. The eggs are laid below the surface of the ground, and the grubs feed on the roots of various plants, and undergo their transformation in the soil. The beetles emerge in the spring. It might be useful early in the spring to give a good dressing of kainit, nitrate of soda, or soot, which would be injurious to the beetle when it emerges in a tender state from its chrysalis, and tries to make its way to the surface." George S. Saunders."

The Raspberry Moth, *Lampronia rubiella* (fig. 140).—The life history of this insect is rather unusual; the moth emerges from the chrysalis in the spring, and the females lay their eggs in the open flower, the egg being laid just below the surface of the receptacle (the core of the fruit); here it feeds until the fruit is ripe, it then leaves its quarters, and spins a small white cocoon in some place at the foot of the bush, frequently selecting the stool. It remains in this cocoon all the winter, and in the spring makes its way to the buds, piercing them and feeding within them in the manner which is so well known. The most effective remedy is to pick off the infested buds or shoots and burn them, taking care that the caterpillars do not escape during the operation. It has been suggested that it would be useful to throw dressings of ashes, or sand mixed with paraffin oil (1 quart of oil to 1 bushel of sand), among the stools in the winter, but I should think it was very questionable if this was of any practical use. Raking away the earth and rubbish from round the stocks and then earthing them up again, has been recommended. G. S. Saunders.

Virescent Tulip.—Mr. SAUNDERS showed a specimen in which the perianth-segments were partially virescent, and in one instance from irregular growth the segment had been torn. The coloured portion uplifted with the growing stem, whilst the green portion remained beneath.

Cytisus Adami.—Dr. MASTERS exhibited fine specimens of this curious hybrid, from the Bournemouth Gardeners' Mutual Improvement Association, showing both parental forms, and various intermediates proceeding from the same branch.

Roses Dying.—Specimens were also exhibited wherein the upper shoots and the stock were dead or dying. The appearances were considered to be due to an over-dose of strong manure.

Melon Disease.—Further specimens were shown and submitted to Dr. COOKE for examination. Dr. COOKE remarked that as the fungus lived within the tissues of the plant, remedial measures were of no use as preventatives. The plants should be burnt, the soil sterilised, and the house white-washed and disinfected.

Supposed Wild Form of *Lilium candidum*.—Dr. MASTERS showed from Mr. Sprenger, of Naples, specimens from the mountains of Calabria. The segments were smaller, narrower, and less recurved than in the ordinary cultivated form.

Fruit of the Tea-plant.—Dr. MASTERS exhibited from Mr. Guttridge, the Botanic Garden, Liverpool, a specimen of *Thea Bohea* bearing a ripe capsule. Similar but larger fruits are not uncommon in Camellias, but are not so often met with. Mr. Odell remarked that he had frequently seen specimens.

Diseased Larch.—Mr. ELWES sent specimens for examination and report.

Diseased Vines.—Mr. CLOSE sent specimens in which the roots were dying or dead. On examination, it was considered that the mischief was due to an over-rich soil, or to having been kept too long in a pot.

GRAND YORKSHIRE GALA.

JUNE 11, 12, 13.—This was the forty-fourth exhibition, and it took place as usual in the Bootham Field, York. As usual, the spacious tents formed a whole by reason of their joining each other at certain points, and they were filled with varied collections of plants, cut flowers, &c., but in respect of some of the leading features it was said there was a perceptible falling off owing to the exceptional weather. Orchids, though bright in appearance, and forming attractive masses of bloom, were not quite up to the usual average; Pelargoniums, though seen in the form of well-grown and flowered plants, wanted longer time to fully develop their blossoms, yet they were, as is usual, a remarkable feature, and they formed a brilliant foreground to the fine examples of specimen foliage plants.

At the luncheon to the visitors and judges, the Lord Mayor stated that during the time the Gala had been held, the Committee had disbursed the sum of over £27,000 in prizes, over £8,000 had been spent on bands to provide the best music, and over £2,000 had been devoted to charitable institutions; and yet they had a good reserve balance. Unfortunately, just before the time for opening the show to the public, a heavy storm passed over the ground, which was followed by supplementary showers. The arrangements made by Mr. C. W. Simmonds, the Secretary, and his staff were good.

Groups of plants arranged for effect on a space not exceeding 300 feet, filled the side of a large tent; they were all arranged according to one pattern—that with which Mr. JAMES CYPHER and others made us familiar



FIG. 140.—THE RASPBERRY-MOTH (*LAMPORNIA RUBIELLA*).

at the large exhibitions held about the country. Palms with an inner line of handsome foliage plants formed the background, and then came dot plants of various kinds, with a few flowering subjects; but in every case richness of tone was derived from the use of gay-coloured foliage plants. Mr. J. SHARP, Valley Nursery, Huddersfield, was distinctly 1st; Mr. Curtis, gr. to J. BLACKER, Esq., Selby, was 2nd; Mr. Townsend, gr. to E. R. FABER, Esq., Harrogate, 3rd.

The class for twelve stove and greenhouse plants brought Mr. JAMES CYPHER, Cheltenham, to the fore with medium sized, fresh, well-grown and bloomed plants, chief among them *Pimelea Hendersoni*, *Erica ventricosa* magnifica, *Bougainvillea glabra*, *Hederonia tulipifera*, *Bougainvillea*, &c.; Mr. W. VAUSE was 2nd.

With six plants, Mr. J. CYPHER was 1st. They included a well-bloomed plant of *Fraxinella eximia*, some *Ericas*, *Dracophyllum gracilis*, &c.; Mr. VAUSE was again 2nd.

There was a class also for six specimens open only to amateurs, and an open class for six from which Orchids were excluded, Mr. JAMES CYPHER again being 1st; and Mr. Lawton, gr. to Colonel HARRISON-BROAD LEY, 2nd.

The best specimen stove plant was a fine piece of *Bougainvillea* Cyptheri from Mr. CYPHER; Mr. VAUSE coming 2nd with *Anthurium Scherzerianum*.

Mr. CYPHER had the best greenhouse plant, a neat piece of *Dracophyllum gracile*; Mr. VAUSE coming 2nd with an excellent piece of *Azalea* Mrs. Carter.

The class for six fine foliage plants brought some superb examples of Palms and Crotons in particular, but being placed behind the broad margin of Pelargoniums, it became extremely difficult to distinguish the names of the exhibitors as well as the subjects. Mr. CYPHER was 1st with huge specimens of *Latania borbonica*, *Kentia Belmoreana* and *K. Fosteriana*, *Seafortia elegans*, and *Croton Queen Victoria*, and another, with three plants Mr. CYPHER was again 1st. There were some fairly good specimens of Crotons, the best Cape Heath was a fine piece of *Erica ventricosa*

magnifica from Mr. CYPHER. *Coleus* were also shown in sixes, the 1st prize going to plants well grown and coloured, but trained quite flat, taking up a great deal of room without being of much decorative value.

There was a class for twenty alpine and herbaceous plants, which brought but one collection, that from Mr. S. HARBACASTLE, Bishop Wilton, York, the best feature was some good pans of Succulents.

The best six Exotic Ferns came from Mrs. TETLEY, Westwood, Leeds (Mr. J. Eastwood, gr.). The principal subjects were *Cibotium Scheidei*, *Davallia fijiensis*, and *Leucostegia immersa*. The Rev. G. YEATS, Heworth Vicarage, York (Mr. J. Snowden, gr.) was 2nd; a fine example of *Microlepia hirta cristata* was included. The Rev. G. YEATS was also 1st with three specimens, and Mr. TETLEY 2nd.

Hardy Ferns were shown in tens and sixes. Messrs. SIMPSON & SONS were 1st with the larger number, and Mr. T. NICHOLSON 2nd with six; the latter came in 1st, and Messrs. SIMPSON & SONS were 2nd.

Groups of Carnations were a leading feature, the best a bold and striking group of Malmaisons came from A. WILSON, Esq., Tranby Croft (Mr. Leadbetter, gr.) The Duke of PORTLAND, Welbeck (gr., Mr. J. Roberts), came 2nd, with five plants of Malmaison, wanting a few more days to get the blooms well expanded. Messrs. WALSHAW & SON, nurserymen, Scarborough, were 3rd with border varieties of good quality, the plants disfigured by the prominence given to the sticks supporting them.

Some very pretty table plants were staged, but the gorgeous-hued pot covers used in one case killed the effect of the plants. Gloxinias, shown in groups, arranged with foliage, were fairly good; they were also shown in collections of eight, the 1st prize going to plants of a superior character. Groups of Roses in pots were rather poor.

ORCHIDS

were, of course, a leading feature, though experts said they, showy as they were, did not come up to York form. The manner in which they were staged made it very difficult to distinguish the subjects in the various classes. The best table of Orchids came from Mr. CYPHER, good forms of *Cattleya*, *Odontoglossum*, &c., predominating. Mr. JOHN ROBSON, Bowdon Nurseries, Altrincham, was 2nd.

With ten plants, Mr. CYPHER came 1st—a good even collection, which included *Cattleyas* Warneri, Mossiae, &c.; *Epidendrum vitellinum majus*, *Oncidium crispum giganteum*, a fine form of *Masdevallia Veitchii*, *Cypripedium Lawrenceanum*, &c.

With six specimens, Mr. CYPHER was again 1st, and Mr. ROBSON 2nd.

Pelargoniums formed a bold bank, but all sections wanted more time to get into full flower; the specimens throughout were well grown. Mrs. TETLEY was the only exhibitor of fifteen, the veteran J. EASTWOOD having it all his own way. He was, of course, awarded the 1st prize. Two purple-tinted varieties, *Madame Hiliare* and *Lady Isabel*, were excellent; so were *Madame Thibaut*, *Magpie*, and *Sultana*. Mrs. TETLEY appeared to be the only exhibitor of six varieties, and she was 1st with three plants.

Fancy Pelargoniums were few and small. Mrs. TETLEY was 1st; and Mr. H. PYBUS was 2nd.

With six double-flowered Ivy-leaved varieties, and also with three, Mrs. TETLEY took the 1st prize; and Mr. PYBUS the 2nd.

Begonias were shown in two classes, but they were only of moderate quality.

Mr. GEO. LEE had the best six Fuchsias, and Mrs. TETLEY the best three. The specimens in this class were decidedly good.

Calceolarias of fair quality were also shown in three classes.

Floral designs were a good feature; they were of a miscellaneous character, each covering 60 feet of tabling. Messrs. W. ARTINDALE & SON were 1st, Orchids predominating. Mr. C. E. SIMPSON was 2nd.

The best group of flowers in vase or epergne for dinner table came from Mr. G. COTTEHAM, who had a combination of red, white, and blue-red *Anthurium*, blue Cornflower, and white *Spirea*; Mr. GEO. WEBSTER was 2nd.

Messrs. PERKINS & SONS, Coventry, and Messrs. ARTINDALE & SON won several prizes for bouquets.

ROSES.

Roses were shown in several classes, the Teas and Noisettes largely preponderating. Messrs. R. HARKNESS and Co., Ilitchin, were 1st with 72 blooms in not fewer than 36 varieties; and Mr. GEORGE PRINCE was 2nd. The only exhibitors of 48 blooms were Messrs. HARKNESS and Co., who were 1st. With 36 varieties Messrs. HARKNESS and Co. and Mr. GEORGE PRINCE were 1st and 2nd. With 24 blooms, Messrs. HARKNESS and Co. were the only exhibitors. With 18 varieties, Mr. GEORGE PRINCE was 1st, and Messrs. HARKNESS and SON 2nd. Mr. G. PRINCE came in 1st with 12 White and Yellow Roses, consisting of *Marchal Niel* and *Niphetos*; Messrs. HARKNESS & SONS, Bedale, were 2nd.

J. P. LAYCOCK, Esq., Bawtry (gr., Mr. O. Lamb), had the best twelve bunches of stove and greenhouse cut flowers; and Sir J. W. PEASE, Bt., M.P., Hutton Hall (gr., Mr. J. McIndoe), was 2nd.

In a class for twelve bunches, Orchids excluded, Mr. McINDOE was 1st; and W. H. B. WRIGHTSON, Esq., Doncaster (gr., Mr. G. A. Keywood), 2nd.

Messrs. HARKNESS & SONS, were 1st with a collection of hardy cut flowers, and Messrs. G. GIBSON & SONS, 2nd, they were a very good feature. Fair collections were shown in the class for twenty-four bunches and in that for twelve.

FRUIT.

In the class for six kinds of fruit, Mr. J. H. GOODACRE, Elvaston Castle Gardens, was 1st, and Mr. McINDOE 2nd.

In the class for a collection of four kinds, Mr. J. McPHERSON, the gardens, Londesborough Park, Market Weighton, was 1st, and Mr. JOHN EASTER, the gardens, Nostel Priory, Wakefield, 2nd.

In the class for three Black Hamburg Grapes, Mr. McINDOE was 1st, and Mr. W. NICHOLS, the gardens, Carlton Towers, 2nd, both having well-finished fruit.

The best three bunches of White Grapes were Buckland Sweetwater, from Mr. NICHOLS; F. B. GROTMAN Esq., was 2nd with the same.

Peaches were fair; Nectarines very good; Melons were shown in three classes, and there were fair Figs. Cherries were very fine, especially Early Rivers; there were very fine Strawberries also, Royal Sovereign predominating.

Vegetables were very finely shown by Lord ALDENHAM, Elstree, Herts (gr., Mr. E. Beckett), who was placed 1st in two classes, showing very fine produce.

NON-COMPETING TRADE EXHIBITS.

Four Gold Medals were awarded, one to Mr. J. COWAN, Garston, Liverpool, for a choice collection of Orchids. Another to Mr. JOHN RUSSELL, nurseryman, Richmond, for a bold and striking group of stove and greenhouse plants; also to Messrs. R. SMITH & SON, St. John's Nursery, Worcester, for a very fine group of specimen Clematis and a table of cut flowers and other plants; and a special Gold Medal to Messrs. BACKHOUSE & SON, nurserymen, York, for an extensive and picturesque group of hardy Rhododendrons, Azaleas, &c.

First-class Certificates of Merit were awarded to Messrs. BLACKMORE & LANGDON, for their splendid strain of double and single Begonias; and to Messrs. RAMSBOTTOM & Co., Gledhill, King's County, Ireland, for their Alderborough strain of St. Bridgid Anemones, which they had in very fine character.

Certificates of Merit were awarded to Messrs. R. H. BATH, LTD., Wisbech, for an excellent collection of cut flowers and Carnations in pots; to Messrs. KENT & BRYDON, Darlington, for a group of plants; and to Messrs. W. & J. BROWN, of Stamford, for a table of plants. The Floral Committee awarded a Certificate of Merit to Heliotrope Lord Roberts, a fine shaded lavender variety from the same firm.

ANSWERS TO CORRESPONDENTS.

APPLE-LEAVES: H. Z. G. Several similar cases have been submitted to us, where the leaves have been crippled and puckered, and the green colour intensified. The appearances are evidently due to some check to growth, perhaps frost. We find neither insects nor fungi, but further examination will be made of the specimens also sent by you to the Scientific Committee.

BRAMBLE SHOOT: Miss E. J. The swollen, gall-like condition of the stem is due to the attacks of an insect known as *Diastrophus rubi*.

CARNATIONS: H. T. Dixon. The older named varieties were charming flowers of moderate size; we cannot, however, bring ourselves to like the "Duchess of Devonshire," albeit of the approved crushed-Strawberry colour. It has a dull, muddy appearance.

CORRECTIONS: "Hybrid Rhododendrons," in last issue of the *Gardeners' Chronicle*, p. 368, 4th par., instead of Aucklandi, read Griffithianum; and read Griffithianum for Griffithi wherever that name appears in the article. W. W.

CORRECTION. On p. 377 of our last issue, for Appley Towers, Ryde, read Appley House, Ryde.

ELECTRICITY AND PLANT GROWTH: V. M. An exposition of the use of electricity in field culture will shortly appear in these pages.

FUMIGATION AND LADY DOWNES' AND MUSCAT OF ALEXANDRIA GRAPES: F. M. It is considered advisable by the most experienced Grape growers not to use any vaporiser or fumigator on these varieties.

GRAPES: Penrose. Yes, the berries are affected with spot—*Gloeosporium*. Destroy the af-

ected berries, and try the effect of spraying with $\frac{1}{2}$ oz. of bisulphide of potassium to 1 gallon of water.

FUCHSIA-FLOWER MALFORMED: Fuchsia. Your flower has four sepals free at the base of the calyx-tube, which bears four sepals and four petals, together with some imperfect stamens and styles. The plant is not likely to continue to produce such blooms.

JARGONELLE AND BEURRÉ D'AMANLIS DROPPING THEIR FRUITS: W. H. Due probably to dryness at the root, the soil being light and shallow and the subsoil gravelly. The malady may be got over by incorporating a large quantity of heavy loam with the staple, and by making a platform of coal, chalk, or concrete, 4 to 5 feet square, and replanting the tree thereon, with, of course, a depth of soil of about 15 ins. under the roots. Whatever the kind of material used for the platform, it should be at the least 6 inches in depth, and be well rammed or beaten, so that the roots cannot penetrate it; and it should be made about 2 feet below the ground-level. A muleh should be employed from April to October, and water applied, more especially in the spring, when the trees are in bloom, and several times during the summer. Your friend's Pear-trees, although growing in a clayey soil, may likewise be suffering from dryness of the soil. Let him make an examination of the soil.

LILY: G. S. I. The too well-known Lily-disease, due to a *Botrytis*. Take up the bulbs, and dust them thoroughly with flowers-of-sulphur, or preferably keep them in the sulphur for some weeks before replanting.

NAMES OF FRUITS: G. T., Lyndhurst. The Apple resembles Hambledon Deux Ans, but is not quite identical with the type in ordinary cultivation. It is undoubtedly a useful variety.

NAMES OF PLANTS: W. T. 1, *Nepeta Gleehoma hederacea* var. *variegata* (Ground Ivy); 2, *Basella* sps.; send when in flower.—A. U. S. 1, *Sedum rupestre*; 2, *Filago germanica*; 3, *Melaleuca genistifolia*.—A. Cratægus *coccinea*.—A. S. P. *Crinum asiaticum* and *Cologyné Parishii*.—Constant Reader, Falkirk. *Lælia purpurata* Schroderi.—J. E. Cereis *Siliquastrum* (Judas Tree).—Enquirer. 1, *Polygonum Bistorta*; 2, *Saxifraga Geum*; 3, *Spiræa callosa*; 4, *Symphytum patens*; 5, *Viburnum Lantana*? 6, *Allium ursinum*.—Constant Reader. 1, *Cassinia fulvida*; 2, *Hippophae rhamnoides*; 3, *Weigela hortensis*; 4, *Berberis vulgaris*; 5, *Exochorda grandiflora*; 6, *Polygala Dalmaisiana*.—Rough. 1, *Euphorbia Lathyris*, Caper Spurge; 2, *Agrostemma coronaria*.—W. H. *Hesperis matronalis*, Sweet Rocket.—A. Munro. *Calycanthus floridus*.—H. D. W. 1, *Adiantum Paottii*; 2, *Diplacus glutinosus*; 3, *Maxillaria tenuifolia*; 4, *Echeveria metallica*; 5, *Echeveria secunda* glauca.—W. M. 1, *Draæna ornata*; 2, *Draæna ferrea*; 3, *Draæna coccinea*. The Orchid is *Odontoglossum luteo-purpureum*, a very good variety.—S. S. 1, *Erinus alpinus*; 2, *Corydalis lutea*; 3, *Phillyrea media*.—A Botanist. *Nasturtium silvestre*, bad specimen; *Cassinia fulvida*; some *Podocarpus*.—J. C. R. *Cypripedium* × *Swanianum* (*barbatum* × *superbiens*). The *Dendrobium* appears to be a badly developed flower of *D. aureum*, which is common in the locality you name, though your description of the growth scarcely agrees. We will compare the flower and again refer to it; its odour is the same as that of *D. aureum*.—Land 11, *Helicrysum stoechas*; 12, *Globularia alypum*; 13, *Smilax aspera*; 13, *Claytonia perfoliata*; 15, *Tenarium fruticosum*.

NARCISSUS BULBS: J. T. The bulbs are affected with "basal rot," caused probably by a fungus. Destroy the diseased bulbs, and try dusting the bulbs with powdered sulphur before re-planting.

PEACH-LEAVES HAVING CIRCULAR BROWN SPOTS UPON THEM: J. Fraser. The leaves are

attacked by the shot-hole fungus. It is too late to do anything this season. Turn over the soil under the trees in the autumn, and sprinkle with quick-lime. Spray with potassium permanganate next spring, just when the leaves are expanding. G. M.

PROLIFEROUS ROSES: T. H. U. Very common, but the reason why is not easy to explain. The plant starts to form a single rose but ends by producing a truss in the centre of each flower in the place of the stamens and petals. Numerous illustrations have been given in the *Chronicle* of this peculiarity.

ROSES: M. A. B. We suppose you have been too liberal in the use of fish-manure, and have planted too deeply. Perhaps frost has had something to do with the death of the shoots.

SMOKE STAINS ON A GLASS ROOF: J. T. E. Hot soda-water and soft soap should remove them if a scrubbing-brush be used.

TOMATOS: Constant Reader. You may be a constant reader, but not a very attentive one, as the Tomato disease you enclose has been very often described and figured. Pull off the affected fruits, and burn them. Spray the plants with Bordeaux Mixture or with potassium bisulphide (liver of sulphur), $\frac{1}{2}$ oz. to a gallon of water. (See also under Names of Plants).

TULIPS: S. W. F. We suppose some accidental admixture has taken place; but Tulips are notoriously unstable, and this may be a case of variation. We do not think that the soil has anything to do with the change.

VINES AND GRAPES: J. A. P. The Vines seem to be recovering their health under the treatment afforded, and in a year longer they will be in a satisfactory condition. Do not over-crop the Vines, or afford a great degree of humidity in the house, which as may be observed in the warty foliage has hitherto been the case; and give more air, even if you have to use a little fire-heat during cool days. The black Grapes are shanked, but as the Vines improve, and there is no over-cropping of them, this malady may disappear in a year or two. Vines with perfect healthy roots seldom have shanked berries.

WEeping TREES OF BEECH, BIRCH, AND RUSSIAN MULBERRY: G. R. W. By themselves the Birch and Beech would do very well, provided they were planted whilst quite young, say four or five years old transplanted seedlings; but in the windy position near Dover indicated, there should be some kind of protection afforded from the quarters whence come the strongest and most injurious winds; say from Austrian or Corsican Pines, Sycamore, Elder, Blackthorn, common Crab, Farze, and Tamarisk, planting the lowly-growing plants more thickly on the windward side and in the front of the trees, as well as amongst them. The Mulberry named is a good hedge-plant, and proof against the wind. Inside of shelter thus formed, almost any species of tree to which a chalky soil is not inimical would succeed. Weeping varieties of trees should not be planted in exposed places, because of the injury inflicted by wind nipping the branches.

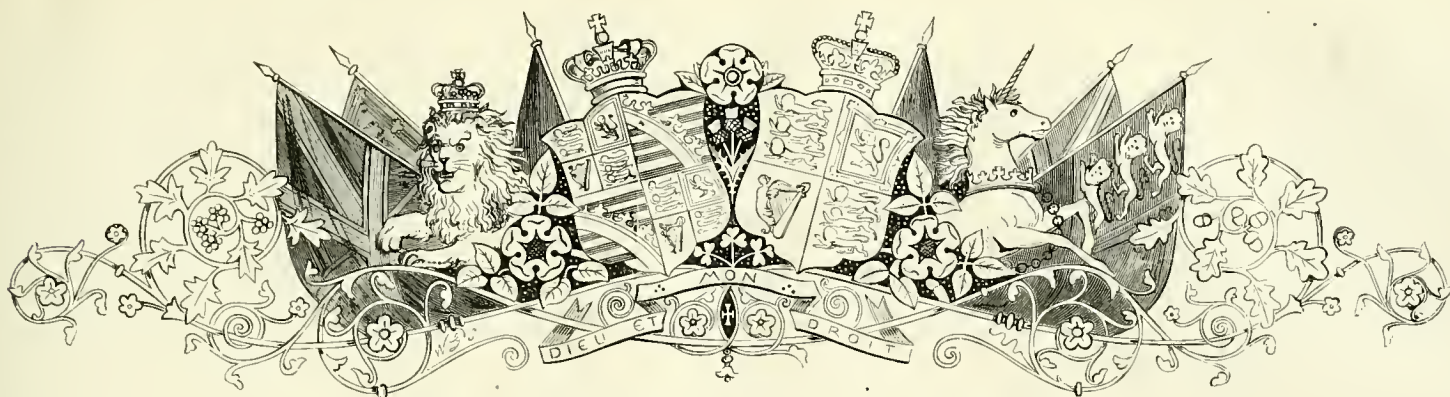
COMMUNICATIONS RECEIVED.—Prof. Waugh, Vermont—C. B., Paris—L. B., New York—W. P.—G. M.—F. W. B.—Constant Reader—W. W.—H. F. S.—T. S.—F. W. M.—Glasnevin—F. B.—E. M. H.—J. G., Liverpool—C. H. H.—E. D. T.—S. H. L.—J. W. D.—A. W.—W. F.—H. J. E.—W. E. C.—Sutton & Sons—W. T. Copeland—W. S., Bournemouth—W. W.—G. V. R.—W. M.—E. H. J.—W. H.—W. W. P.—E. C.—J. K. K.—Sons—F. A. W.—J. M.—O. T.—R. McIntosh—G. W.—H. W. W.—J. J.—J. B.—C. T. D.—J. Allsop—J. J. W.—R. D.—M. C. C.—W. M. W.—A. Bacqué, Madrid—J. F. S.—Jas. H.—R. Billiard, Paris—W. P.—T. Rochford & Sons—G. M.—T. W. B.—M. A. B.—W. S.—E. B.—A. G.—C. A. B.—Strix—Jamaica.

DIED.—WRIGLEY: On the 6th inst., ANNIE, the wife of OSWALD OSMOND WRIGLEY, of Bridge Hall, Bury, Lancashire, aged sixty-four years.

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



FITZROYA PATAGONICA IN THE GARDENS AT PENCARROW, CORNWALL.



OUR CORONATION NUMBER.

THE

Gardeners' Chronicle

No. 808.—SATURDAY, JUNE 21, 1902.

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REGAL CROWNS.

THE word "crown" means curved or circular, a decoration shaped to the head it is to surmount; what Macbeth calls the round and top of sovereignty. For its genesis we must go to the oriental turban: worn plain by common men, on royal heads it was composed of rich material and adorned with gold and gems—

And the tent shook, for mighty Saul shuddered, and sparkles 'gan dart
From the jewels, that woke in his turban at once with a start,
All its lordly male sapphires and rubies courageous of heart.

Transported to colder Western Europe, the turban dropped away, but its ornaments remained. In great simplicity at first. Egberht, called commonly the first English king, wears on his coins a plain band of gold. On the head of the Conqueror a century or two later, the gold fillet carries three Fleurs-de-Lys, and so it long remained.

Its later developments into our present royal crown with, as we are told, 3600 precious stones, may be traced upon the Great Seals of successive English sovereigns.

It would seem that Greek and Roman taste, more exalted perhaps than Frank and Saxon rudeness, disdained this headgear of barbaric pearl and gold. The Greek eye looked for decorative beauty to the foliate and floral upgrowth of earth's surface rather than to the treasures hidden, and perhaps better hidden, in her bowels. The Ionian, aristocracy of earliest Hellas, proudly symbolised their primacy by a crown of Violets: the highest prize at the Great Olympic Festival was a garland of Olive leaves. The Roman general, who had relieved a beleagured city, was presented by its townsmen with a coronet wreathed gracefully from the grass which had grown within its blockaded walls; the civic crown, most honourable of all, the representative of the Victoria Cross among the legionaries, was made of Oak leaves. Of Roman monarchs, only the hateful Tarquins vaunted golden crowns; the coins of mighty Julius and his successors down to Constantine exhibit laureated brows. Laurel on the head and Palm leaves on the tunic were the insignia of a triumphing general; even to-day, with a curious fidelity to old ideals, the royal head upon our newest postage stamp is flanked with Laurel and with Oak. And so, by these memories from an older age, these survivals from a newer world, the coronary topic of the moment claims our interest, not only as citizens, but as gardeners. As the turban shrank away, but left its ornaments behind, so, surrendering to the herald and the antiquary rose diamonds and gold arch and Balas rubies, we fasten on the floral Lilies still conspicuous in our English crown, which, like the Strawberry-leaves of duke and marquis, connect the cumbrous ceremonial head-dress of to-day with the simpler earlier wreaths of Nature's fashioning; recall the princes and princesses in the pageantry of the "Flower and the Leaf," wherein knights bore crowns upon their scutcheons only; on their heads—

Chapelets newe made of Laurel grene,
And every lady had a chapelet
Upon her head of branches fresh and grene;
Some of Laurel, and some full pleasantly
Had chapelets of Woodbine, and sadly
Some of Agnus Castus. . . .

And, in fact, these graceful wreaths are not extinct among us even now. "Last May we made a crown of flowers," says the dying girl of Tennyson's pathetic poem; and in the May Queens of Atherton and Keswick, above all of Whitelands, endowed and blessed by Ruskin, Chaucer, were he here to-day, would recognise the faire, freshe May

of his own joyous time, would further learn that in a thousand English villages school-children still, like gentle Emelie, wake before their hour "to don honour to May and for to rise."

It is natural to ask how far the crown-wearers, like the crowns, can be claimed from history as manifesting horticultural associations; what kings and queens have, as says old Gerarde in his *Herbal*, "loved to live in gardens." Had not monarchs been gardeners in Homer's time, he would not so lovingly have painted King Alcinous garden, its 4 acres of well-walled ground, its Figs and Apples, Pears and Olives, Vines and Pomegranates, flower-beds and fountains. Solomon "planted vineyards, gardens, orchards, trees of all kinds of fruit," with reservoirs to water them. Josephus tells us how at early dawn he would drive out to them from Jerusalem, clad all in white, his chariot drawn by priceless horses, his archer-guard behind in purple vests, their long black hair powdered with gold dust, which glittered in the sun. A king of Babylon raised the hanging gardens for the Median girl who, in the level Euphrates plain, pined after her native mountains. Ahab coveted a garden, with tragic issues to himself and his descendants. Herod enclosed a paradise of Palm and Balsam in the rich Jericho oasis. The King of Pontus won for himself a name by the "sovereign Mithridate" which his botanical skill compounded. Julius Caesar bequeathed to the citizens of Rome his "private arbours and new-planted orchards." The Royal Poet of Scotland has left in his "King's Quhair" a delicious picture of a May garden. Our Queen Elizabeth loved "knotted gardens;" her successor, whose herbalist was the famous L'Obel, "pleach-work" and intricate flower-beds.

Charles II., keeping Court during the Plague year at Oxford, loved to wander questioning between the high Yew-hedges of the Physic Garden, with its eccentric Curator Bobart. Lorenzo de Medici created the lovely Camaldoli Gardens as a retreat from the autumnal heats of Florence. Louis XIV. handed over to Le Nôtre for the Versailles garden 200 acres, and 200,000,000 francs. In the Jardin Anglais of the Petit Trianon, Rose-trees still survive which were planted by poor Marie Antoinette. Napoleon, anticipating our Crystal Palace, wished to cover in with glass the Tuileries grounds. Restored Louis XVIII. laid out at Versailles an exact facsimile of the garden which had amused his exile in his Hartwell home. The "Flower of Brunswick," Princess Charlotte, shaped the borders at Claremont, and superintended the cottage gardens of the villagers. The consummate skill and prescient taste in planting of the late Prince Consort is stamped on Osborne and Balmoral; and the gardens of the Neue

Palais at Potsdam were fashioned by his daughter when Crown Princess.

"These are imperial works, and worthy kings," said Pope, himself an enthusiastic gardener; hardly could the unmeasured personal influence of an English sovereign be better spent than in promoting gardening. Not at his own end, but at the end farthest removed from him, of the long social chain. It might be well no doubt if the owners of our private seats and homes, palatial or simple, could be all, like the enlightened Duke who discovered and fostered Paxton, their own head gardeners; well, too, if the retired tradesman in his villatic home could be emancipated from the inartistic tyranny of nurseryman and builder; better still, if the suburban clerk could be cultivated to transform and beautify the dull street in which his lot is cast by judicious colouring and verdure in his frontal, twelve yards square. But we recall the dictum of a great modern prophet:—"Lead the fashions for the poor first; make their lives look well, and your own will look all the better." It is amongst the very poor,

warreners in our monstrous city slums, that a horticultural evangel might find widest scope, and exercise most nutrient reform. Of cleanliness, of art, even of religion, flowers are the most eloquent, albeit the least self-conscious preachers. Familiar many years ago with the worst streets of one amongst our largest towns, I early learned that a flower-box without, or a "tree," as they called it, within a well-cleaned window, was the unfailing sign of comparative moral and domestic order. I sometimes see in my dreams a universal Kyrle Society; its subscribers, committees, officers, visitors, bound into a vast organisation which should cover every town, and whose president, not nominal and ornamental, but active and inspiring, should be a flower-loving and philanthropic king. I see deep, strong, well-drained window-boxes outside every squalid home, alight with successive blooms, from the Hellebore, Aconite, Snowdrop of January, to the lingering Chrysanthemum of late November; their pavement-angles fringed with Virginia Stock and Candytuft and Mignonette, their frowsy walls masked with small grey hardy Ivy and with Ampelopsis

Veitchi. I imagine penny flower-shows opened once a month in every chapel and ward hall, with competition for prizes among the poor, with loans from the gardens of the rich, with lively stimulating lectures to explain, and illustrate, and fructify. I behold the rough denizens of these ruralised wilds turning out with syringes, and water-pots, and shears, when their hard day's work is done, to irrigate, and beautify, and trim.

The splendid accessories of next week's processions, services, festivities, are above all things stamped with transitoriness: of a commemorative enterprise such as this, remedial, far-reaching, missionary, the duration would be as incalculable as the beneficence. It would elevate Voltaire's sneering sarcasm, *Cultivons notre Jardin*, into a genuine motto, not only of stately mansions and of cultured houses, but of Bethnal Green and Whitechapel, of the Jago and of Tom-all-alone's; would practicalise the aspiration with which Ruskin ends his sanguine rhapsody: "That the name of all great kings set over Christian nations, must at last be, in fulfilment, the hereditary one of those German Friedrichs, 'Rich in Peace'; and their Coronation shall be with wild olive, not with gold." *Corycius senex*.

SANDRINGHAM: THEIR MAJESTIES' COUNTRY HOME.

(AS VISITED BY OUR REPRESENTATIVE BY EXPRESS PERMISSION.)

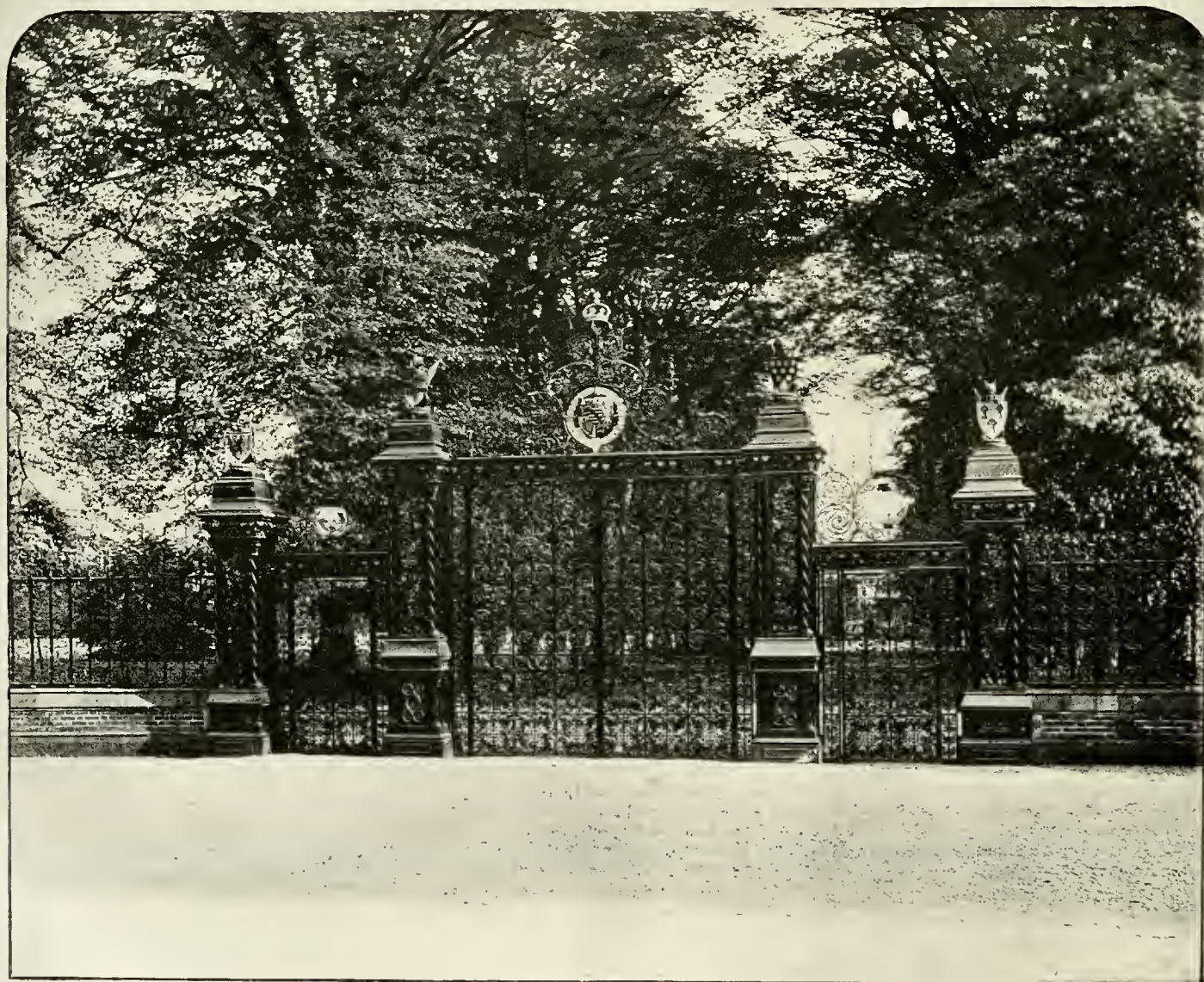


FIG. 141.—THE "NORWICH" GATES, SANDRINGHAM.

(This and the following illustrations are from photographs taken, by express permission, for the "Gardeners' Chronicle," by Mr. Ralph.)

AFTER a visit to the lovely estate of Sandringham, the fondness our King and Queen are known to have for the place appears most natural. The estate of some 11,000 acres was purchased for our present King in 1863, and Sandringham House was prepared for his residence. In this house, as Prince and Princess of Wales, their Majesties spent much of their time, and the Royal Princes and Princesses were brought up here. As Prince of Wales, King Edward had only two houses to maintain, and each was a home in every sense of the word. For various reasons Marlborough House is associated with some of the most memorable events in their experience; and perhaps in a greater degree even than Sandringham has been their Majesties' home since their marriage on March 10, 1863. But Marlborough

ment of all of these, and the King's stables and cattle farm at Wolferton are exceedingly well appointed and skilfully managed, as his repeated successes at exhibitions and upon the Turf have testified. The estate is abundantly stocked with game, and the pheasants are so numerous and tame that they cross and re-cross the drives fearlessly as one passes along them.

But it is from the point of view of the gardens that Sandringham has most interest to us, and it may be said at once that they are of such a character as to illustrate the very great interest their Majesties are known to take in the practice of horticulture; indeed, it is entirely due to their Majesties' initiative and encouragement that the gardens are in such good order.

fine plants of *Euonymus radicans variegata*. At the end of the house, on the new library building facing south-east, a sundial affixed to the wall bears the following familiar inscription:—

"MY TIME IS IN THY HANDS."

"Let others tell of storms and showers,
I'll only count your sunny hours."

The flower garden, immediately in view of the principal windows, is a carefully worked out design with variously shaped beds. A short time since these were bright with wall-flowers and other spring blooming plants, but they now contain a selection of the choicest bedding-plants, the effect of which is relieved by numerous "dot" specimens of Palms, and other species of an ornamental character. On the terrace, close to the



FIG. 142.—THE GARDEN FRONT, SANDRINGHAM.

House, being in London, could not afford the pleasures and interests that have made the country seat of Sandringham so appreciated by its royal owners.

Situate on the north-west border of the fertile county of Norfolk, only a mile or so from the waters of the Wash, the estate is quite far enough from the turmoil of town to afford a quiet and secluded retreat, yet near enough to be fairly accessible. It is approached from Wolferton station, where there is a Royal entrance and waiting-rooms, or from the curious little circular village of Dersingham, over moorland, and through avenues of fine trees.

The King takes a lively interest in farming, cattle breeding, and in most kinds of sport. Sandringham offers facilities for the enjoy-

The dwelling-house is not a grand mansion, but its modest character, made of red brick, appears as an instance of the homeliness that is an essential feature of Sandringham. The entrance-hall is upon the east side, and is approached by a spacious, but short, drive from the Norwich gates.

The aspect of the house is not exactly east and west, however, and the opposite side with the terrace and flower-garden, is south-west by west. A view of the building from this aspect is shown in fig. 142, the older portion on the left, and the newer library with rooms above, at the other end. The walls are screened with many climbing plants, including *Ivies*, *Ampelopsis Veitchi*, *Roses*, *Lonicera fragrantissima*, *Crataegus pyracantha*, and some

house, room has also been found for a few flower-beds, and in these are planted species that will afford fragrance as well as beauty, the former virtue being esteemed equally with the latter.

Of the older features of Sandringham, there are several that give much charm to the place, and which represent the growth of very many years. Such are the old Scotch Firs that line the path known as the Church Walk, and the avenue of Lime trees that one enters immediately after passing through the handsome Norwich Gateway. The beautiful church at Sandringham, which their Majesties attend, is situate in a pleasant part of the park, and only a very short distance from the pleasure grounds. The prettier view of the "Church Walk" is from

the gate dividing the pleasure-grounds from the park.

THE "NORWICH" GATES.

Having already mentioned the Lime Avenue and the Norwich Presentation Gates, on the north-west of Sandringham House, which are shown in fig. 141, it may be remarked here that the gates were presented to the King by the loyal people of Norwich

MEMORIAL TREES.

Near to the great Limes is another avenue of considerable interest, if not of great beauty. It is composed of memorial trees only, and having been planted at different times and of different species, the irregularity of growth could hardly be greater. These memorial trees, and others in almost every portion of the grounds, which

by the Duke of Sutherland in 1865, is also vigorous. Other memorial trees noticed as isolated specimens on the grass, included the Queen's Oak, planted by the late Queen in 1889, a shapely, vigorous specimen, now about 27 feet high; an Oak planted by the King of the Belgians in 1887; a Turkey Oak, planted by H.R.H. the Duchess of Albany in 1887; *Picea pungens*



FIG. 143.—THE QUEEN'S PANSY GARDEN, SANDRINGHAM.

on the occasion of his marriage. They are of wrought iron and very handsome. If the illustration be looked at with a magnifying glass, an idea will be obtained of the design of the gates. At the base it represents vine leaves and fruits, with oak foliage and acorns above, whilst towards the top are holly leaves, roses, &c. The gates are surmounted by the Crown, Royal arms, and four lions, &c., in gold, and there are the words "*Honi soit qui mal y pense*."

here as at Osborne, Windsor and other Royal residences, serve to keep in remembrance the visits of distinguished personages, and to mark domestic events in the lives of their Majesties' immediate circle. The species that are thriving best in the avenue are *Abies Pinsapo* and *Pseudo-tsuga Douglasii*. The Fir was planted by the Grand Duke of Mecklenburg-Strelitz on April 4, 1874, and the Douglas was planted by a Bishop of London. *Cedrus Deodara*, planted

glauca, planted by H.M. the King of the Hellenes, July 16, 1887, now about 18 feet high and a nice specimen; *Cryptomeria elegans*, planted by H.R.H. Princess Charles of Denmark on October 28, 1896; *Fagus purpurea*, planted by H.R.H. Prince Waldemar of Denmark on July 25, 1898; *Abies Pinsapo*, planted by H.M. the Czarévitch on November 9, 1874; and *A. Pinsapo*, planted by our present Queen on April 4, 1874, now about 40 feet high, growing well (see fig. 146).

The most recently planted memorial tree at Sandringham is a plant several years old of *Quercus sessiliflora*, which, as its label states, was "planted by King Edward VII., George Prince of Wales, and Prince Edward of Wales, on His Majesty's 60th Birthday, 9th November, 1901." This will be the last memorial tree planted at Sandringham previous to His Majesty's Coronation.

Well, and the Queen is reputed to have a fondness for it and the beds around it. In fig. 143 the Queen's Pansy beds are shown around the well. To all these beds there is a double edging of Box, and white shell or gravel covers the little paths. In the well-head a Rose is planted, and there exists a photograph showing the Queen in the act of affording water to the plant.

dron beds, which a short time since were, and probably are now, brilliant with colour. The library end of the mansion itself can be seen through the trees. Following this chain of lakes, a view is presently obtained of York Cottage, standing on rising ground. The lake widens out at this point very considerably, and there is a pretty island which may be reached from York Cottage by a rustic bridge. Three weeks ago the white and yellow Brooms and Gorses were in full bloom, and the island was very gay. There were also Berberis, old Thorn trees, Rhododendrons, Roses, Lilacs, &c., planted, that make the scene at all seasons of the year one of exceptional beauty.

The view of York Cottage in fig. 145 shows the splendid site the pretty house stands upon, also part of the island with the rustic bridge leading thereto, and, on the sloping greensward to the right, a dozen or so large beds of selected varieties of Rhododendrons, which were commencing to expand their brilliant blossoms when the photograph was obtained. It will be seen from that figure what a charming residence the King has provided at Sandringham for the Prince and Princess of Wales. An old Oak on the island and immediately near the bridge, is an interesting and noble feature. It has a bole that measures more than twenty feet in circumference at three feet from the ground level. Another very similar specimen is near to the upper lake and park-gates; this one, which is encircled by a seat, is about equal in its dimensions to the one in front of York Cottage. The stepping stones shown in fig. 145 are upon an addition to the watercourse which carries the water off in the direction of his Majesty's kennels. Throughout this portion of the grounds there can always be heard the pleasant sound of water dropping from miniature falls devised for the purpose. Several specimen trees of *Sequoia gigantea* and a few species of Pines including *Cedrus Libani* are noticeable, but the Conifers generally do not attain to great size, the soil at Sandringham apparently being of too light and poor a nature to support them after attaining to a height of forty or fifty feet.

THE NEW ROSARY.

Not far distant from York Cottage is a Maze constructed of *Thuia gigantea*, Box &c., and in the same portion of the grounds is the enclosure that once contained the asphalted tennis court. A few years ago the tennis court was abolished, and the enclosed area formed into a rather singular looking rosary; it is enclosed with very high fences of ornamental wire painted green. Inside is a kind of wire pergola 25 feet high, in the same colour. This is covered with climbing Roses. Half-way up, on the summit of each pillar, is an inconspicuous box which contains soil for a second tier of plants to grow on the upper portion. Inside the wire fences and on the border around are planted Tea Roses, the Hybrid Perpetuals being grouped in beds. Two of these beds have wire tops representing the Prince of Wales's Feathers. There are wire fences to all of the beds, inside margins as well as outside, these being a foot high. Two beds of the variety *Papa Gontier*, close to the old-fashioned pavilion through which the rosary is approached, succeed unusually well, and flower abundantly.



FIG. 144.—THE HOLY WELL, SANDRINGHAM.

THE HOLY WELL AND YORK COTTAGE.

A little below the terrace to the south of the mansion is a sunken flower garden in the shape of a half moon, and in the centre is an old white well-head, probably brought from Italy at some time. On reference to fig. 144, it will be seen that an iron vessel is suspended over the well, as if to be lowered for the purpose of obtaining water. It is known in the gardens as the "Holy"

Continuing in the same direction, towards York Cottage, the lakes appear in view, where Weeping Willows, white Silvery Birches, and other suitable trees and shrubs adorn the banks and cast their shadows in the water. One of the best views of the lake nearest to the mansion is from a point near to the Park Gates, affording an excellent picture of its outlines, and beyond, through a kind of vista, to some Rhododen-



FIG. 145.—YORK COTTAGE, SANDRINGHAM.

dantly. In the centre of this garden is a marble columnar fountain, and there are grass and gravel walks around the beds.

THE DELL AND QUEEN'S WILD GARDEN.

The Dell is a charming little scene in which a winding stream flows through rapidly rising banks on either side. Several tall Birches, Bamboos, Rhododendrons, Ferns, &c., adorn the banks, and the view is not only a grateful retreat from brilliant sunshine, but it is a most delightful foil to the more formal features of the garden. The view from one end, showing the winding course of the water, is exceedingly pretty.

children occasionally enjoyed a cup of tea in the pavilion there, but for years past the dairy has supplanted the pavilion. The ground in front of this model building is laid out as a Dutch garden, and the photograph shows some clipped trees growing in the sunken gardens on each side of the walk. The beds were bright with Tulips and Pansies when the photograph was taken. The tree with a seat around it, is an Elm, and the large tree to the left is *Abies Pinsapo* planted by the Czarevitch in 1874. There are two sundials, one in each garden. One of these was made from a fragment of old Kew Bridge, and placed at Sandringham in 1901.

also from bush specimens that divide the principal brakes of land.

A few explanatory words may be said here in respect to fig. 151, which gives a good idea of the gardener's house and its pretty surroundings. This view is immediately outside the kitchen-garden walls at the west end. Until eight or ten years ago, the old glass-houses stood in a direct view from the cottage, but when under Mr. Mackellar's supervision a new range was built on the north side of the kitchen garden, this ground, which is still termed "the new grounds," was laid out as a perfectly level flower garden. A few beds of climbing Roses and other modifications would make this garden more effective. At either end is an oak summer-house, one of which is shown in the photograph. It would be a matter for congratulation if gardeners in all first-class establishments were provided with a house that in some measure at least would compare with the one afforded by the King.

THE PLANT-HOUSES.

The range of plant houses built by Messrs. McKenzie and Moneur, for the King, five years ago, consists of a corridor 200 feet long, with six span-roofed houses, 100 ft. long, running from it. These are built entirely of teak wood, and fitted with teak wood lath blinds; some of the floors also are of teak wood, with iron gratings on either side. The ends of several of the houses will be seen in fig. 149. The corridor is kept gay with a variety of flowering plants, and lately contained stellate *Cinerarias*, *Hippeastrums*, *Schizanthus*, *Fuchsias*, *Pelargoniums*, and many other species of flowering plants, Palms, &c., whilst the walls and rafters are clothed also with flowering climbers. Two of the six span-roofed houses are furnished in the same way as the corridor, leaving four others. A very large quantity of plants is necessary to keep such a corridor, 400 ft. long, continually furnished with plants in flower, especially with the amount of space there exists for growing the plants. Entering one of the four remaining houses, it was found to contain Orchids, and the *Cypripediums*, *Dendrobiums*, *Odontoglossums*, *Miltonia vexillaria*, &c., were looking well and making good growth.

In another house was a collection of *Codiaeums* (*Crotons*), including plants from 8 $\frac{1}{2}$ or 9 ft. high, to small ones in 5-in. pots. These and other ornamental-leaved plants are frequently required in numbers for the decoration of the rooms in the dwelling house. In the third house are collections of *Caladiums*, *Coleus*, *Gardenias*, and a fine batch of *Cecylogne cristata* in pans; *Calla Elliotiana* was in bloom. In winter this house is furnished with the fine *Begonia Gloire de Lorraine*, many of the plants being cultivated in cork baskets. One thousand to twelve hundred plants are cultivated each year.

The remaining house contained Carnations exclusively, on the central and side stages. Fifty feet, or one-half the house, is filled with varieties of the *Souvenir de la Malmaison* type, and the other half with varieties of the tree section. All looked well, and the *Malmaison* plants will produce a very large quantity of blooms. There are hundreds of other Carnations in frames, as it is certainly a favourite flower of their Majesties. Close to this range a lean-to Fig

*



FIG. 146.—*ABIES PINSAPO*, PLANTED BY H.M. QUEEN ALEXANDRA IN 1874.

The Queen's Wild Garden is a little spot screened in a plantation; a grassy path leads through this, and on either side wild flowers are growing. The gardeners are unable to make this spot appear more wild than Her Majesty would like it to be. It is the extreme opposite of the formal garden in front of the mansion.

THE DAIRY GROUNDS.

The grounds that have been remarked upon so far are divided from the kitchen garden, glasshouses, dairy grounds, &c., by a roadway which is kept in repair by the King, but which does not belong to the Sandringham estate. The pretty dairy and its grounds are at one end of the kitchen garden, just outside the walls. The scene is shown in fig. 147, where only part of the dairy building is included. The corner that does appear, however, is interesting as being the Queen's Tea-room. Before the tennis court was abolished their present Majesties and their

THE KITCHEN GARDEN

consists of about 14 acres contained within the walls and 2 acres outside. A view of the main walk through this immense garden is shown in fig. 148. It will be seen that on either side are borders of bright flowering-plants, and then 6 feet high trellises with cordon Apple and Pear trees. The substitution of these some years ago for the Arbor-vitæ hedge was a very great improvement. The walk shown in the photograph is 310 yards long, and the photograph was taken from one end. In the centre, which is scarcely discernible, is an ornamental fountain. The broad paths are all edged with Staffordshire edging bricks, there being about 40,000 of these in use here. Reference in detail cannot be made to the crops, which were just beginning to show themselves. It will be understood that in such an area a very great quantity of vegetables and fruits is produced, fruits from the espalier trees and wall trees, and

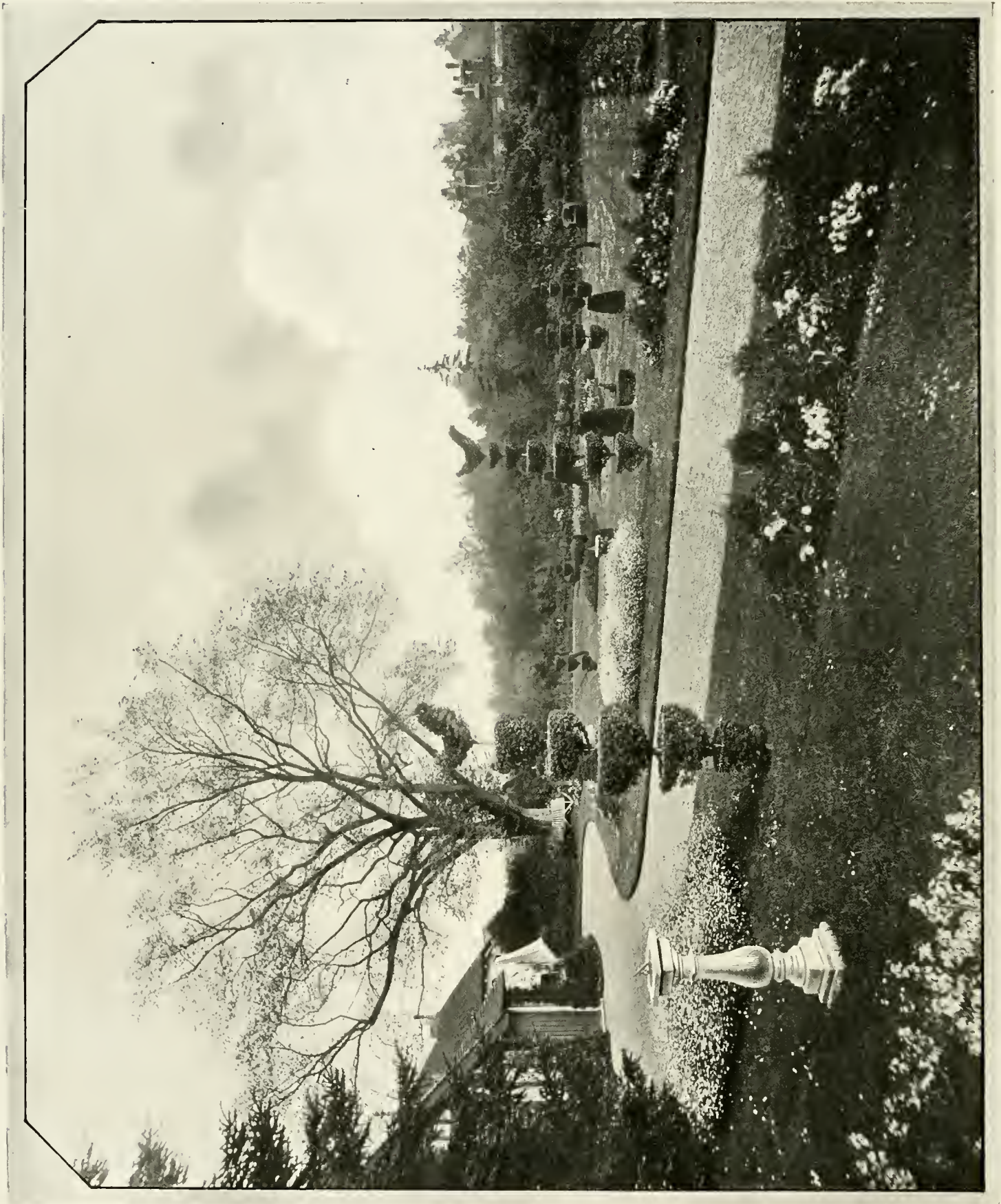


FIG. 147.—THE "DAIRY GROUND" AND QUEEN'S TEA ROOM, SANDRINGHAM.

house, 120 ft. long, with plants in borders and in pots, contained an abundance of ripening fruit. In other houses were noticed a fine batch of *Calanthes*, good crops of Melons, of such varieties as Countess and Hero of Lockinge, also of Cucumbers, including the varieties Improved Telegraph and Cardiff Castle; show Pelargoniums, *Pancratiums*, *Fuchsias*, Tomatos, &c.

Two lean-to, rather narrow, *Odontoglossum*-houses held a fine display of bloom of *O.*

Stirling Castle Peach being prominent; the next division was the second early vinery, the Grapes in which were fast colouring, among them *Black Hambro* and *Madresfield Court*; next was a porch with a *Rose* growing under its shelter; beyond a young *Muscate* of *Alexandria* vinery, the canes four years old, and having borne one bunch of fruit each last season are now carrying several. The next division has only been planted with Vines this season, the varieties are mixed

ripening on pot trees; next to this were Plums, and beyond a vinery of mixed Grapes bearing a very heavy crop of fruit. *Muscats* filled the next house, and the adjoining porch contains their Majesties' collection of Japanese dwarfed trees, including a remarkably fine specimen of *Cupressus* in a prodigious blue vase. The following house contains Peaches and Nectarines, a fine crop of fruits just colouring at the time of our visit, and in many of the houses was a shelf



FIG. 148.—THE CENTRAL WALK OF THE KITCHEN-GARDEN, SANDRINGHAM, 310 YARDS LONG.

crispum, and *O. Pescatorei* varieties, also *Masdevallia Harryana*, &c.

FRUIT HOUSES.

The principal fruit range consists of a number of lean-to houses on the south wall of the kitchen garden, and extends for a length of 200 yards. Part of this range is older than the rest, the newer portion having been built about the same time as the plant range. Entering the range at one end the first division contained (on May 30) ripe Peaches and Nectarines, Lord Napier Nectarine and

ones, and Tomatos will yield a good crop of fruits at the back of the house; then is another Fig-house, and a second porch with *Rose*. Beyond was a good house of *Muscate* Grapes, followed by a Peach and Nectarine-house, in which are three large standard trees, the fruits from which had been gathered; another porch divides this from a Peach-house in which the front trellis is bent over to permit of sunlight reaching the trees on the wall; the adjoining house also contained Peaches and Nectarines, including *Cardinal* Nectarines

or accommodating a very large number of Strawberry plants in the forcing period.

A short distance from this range is a smaller one that must not be overlooked, because the crops were of remarkable weight and quality. In the first division young canes of *Lady Downes* Grape were unusually strong and vigorous; the second division contained also *Lady Downes*; the third division *Black Alicante*; and the fourth *Black Hambro*, with an exceedingly heavy crop, then affording ripe Grapes for the table.



FIG. 149.—THE "BOTHY WALK," SANDRINGHAM.

THE GARDEN BUILDINGS.

In the view of the "Bothy Walk," shown in fig. 149, is a feature of Sandringham that, from the gardener's point of view, is one of very great importance, as it shows with what completeness means have been provided for conveniently discharging the work of the garden, for the proper storage of fruit, and for the housing of the young gardeners. To the right of the photograph it will be seen that much of the 310 yards' length is occupied with garden buildings, each of which is entered by a separate door from the broad path. The whole of this work has been done since 1890. The opposite wall, where Pear trees are growing on the wall, and a very long mound or raised border contains a remarkably good collection of Roses, which succeed well in the position, makes a very nice view, especially in spring-time, when the Aubrietias and other alpine plants that adorn the deep edging of rockery are, in bloom.

One boiler-house contains four powerful saddle boilers, each with water-way bars,



MR. T. H. COOK.
His Majesty's Gardener at Sandringham.

that may be worked together or separately, and that heats most of the glass-houses, offices, sheds, &c. The Fig-house, back pits and frames, also the old portion of the long fruit range and range of old vineries, are heated by three additional boilers, each contained in a separate stoke. The potting-shed and packing-shed each affords ample room for working therein, and a painter's workshop divides this from the most convenient and elegant Grape-room, with its stands, fittings and inner walls all of polished pitch-pine. Next is a good seed-store and office, also a Mushroom-house 70 feet long. Then come the bothies, with a housekeeper's apartment at the end, and which may be seen standing a little way out, some distance up the walk. The bothies have twelve men in them, and each is afforded a separate bedroom. All the woodwork is of polished pine, and the fittings generally are convenient and good. The sitting-room, reading-room, excellently fitted bath-room and lavatories up-stairs, are all what they should be, and it would be gratifying if the thought and consideration shown

to young gardeners at Sandringham were given them in all gardens.

CONCLUDING ITEMS.

The pleasure-grounds altogether are about 100 acres in extent, and with the 16 acres of kitchen-garden, and the numerous glass-houses, the forty or so gardeners and

of beautiful blooms, and flowers very late in the season.

Most of the improvements their Majesties have made at Sandringham were carried out by Mr. Mackellar, who is now at Windsor.

His successor at Sandringham, Mr. T. H. Cook, whose portrait is given on p. 410 was for seven years head-gardener to Lord

FRUIT AND VEGETABLE SUPPLIES IN THE CORONATION YEAR.

THE year of the Coronation of His Majesty Edward VII. will be noted for a great increase in the importation of fruit from Victoria and Tasmania, large quantities of fine produce having arrived this season at Covent Garden. The chief of these fruits are Apples, which have come to hand in greatly improved condition, owing to the manner of storage in the cold chambers on board the steamers; these Apples consisted of well-known varieties, such as Cox's Orange, Ribston, Sturmer, and Blenheim Pippins, Emperor Alexander, and other good varieties. The fruits were wrapped separately in paper, and carefully packed in boxes of an uniform size and shape. There were also some Pears and Grapes, and there is the probability that in the near future quantities of other fruits, of which the public know little, will be sent over.

From the Cape of Good Hope, in which colony the fruit industry is yet in its infancy, we have received this season since the middle of the month of January, 1902, regular supplies of Apricots, Peaches, Nectarines, Plums, Pears, and Grapes, in variety—some of the Plums, Kelsey's, were of immense size; the Grapes came to hand in better condition this season than heretofore, and the flavour in some instances was very fine—their season is now over.

From Jamaica, where the fruit-growing industry is being fostered by the Government, we are obtaining Bananas in large quantities, and it would appear that almost unlimited quantities can be exported from that and other islands. From the West Indies we also get Oranges, Pineapples, Grape-fruits, Shaddockes, Mangos, &c., and in the near future we may expect many other kinds of fruits of which the public knows but little. The Mangos from Jamaica are not considered to be the equal of those from Bombay, neither are the Bananas equal to those from Teneriffe, and whether the Grape-fruits (Citrus) will ever become popular here time only will show.

From the Canary Islands and Teneriffe, whose productions are good, we receive large quantities of Tomatos of fine quality; Bananas, Melons - Pears [*Solanum guatemalense*], the fruit of which is but little known; Potatos, Myatt's Kidney being the chief variety; Onions for pickling of a very mild flavour, all of which invariably come to hand in good condition, owing to the suitable methods in which they are severally packed.

From St. Michael, Azores, we get the finest Pineapples, chiefly the smooth Cayenne variety, whose fruits often exceed 6 lb. in weight, which come to us nearly all the year round. This season the prices realised for fruits have not been high, but of all fruits, excepting only Oranges, Bananas, and a few others, there is none that equal in point of flavour and general good quality those Old England can produce. Such Peaches and Grapes as are grown a short distance from London surpass all those of foreign production, and the writer has seen many in his long experience as a market salesman. T. P.

FLOWER-CROWNS IN AMIENS CATHEDRAL.—

Over the side-doors of St. Firmin's Chapel we may see two medallions representing St. Clair with a vase, and St. Agnos with a Lily. It was in this Chapel that in old times crowns of flowers were given to those chosen to carry the relics of St. Firmin in procession on Ascension Day, and on the day of the Fête Dieu. "*The Cathedral Church of Amiens*," p. 65, by Rev. J. Perkins (G. Bell & Sons, 1902).

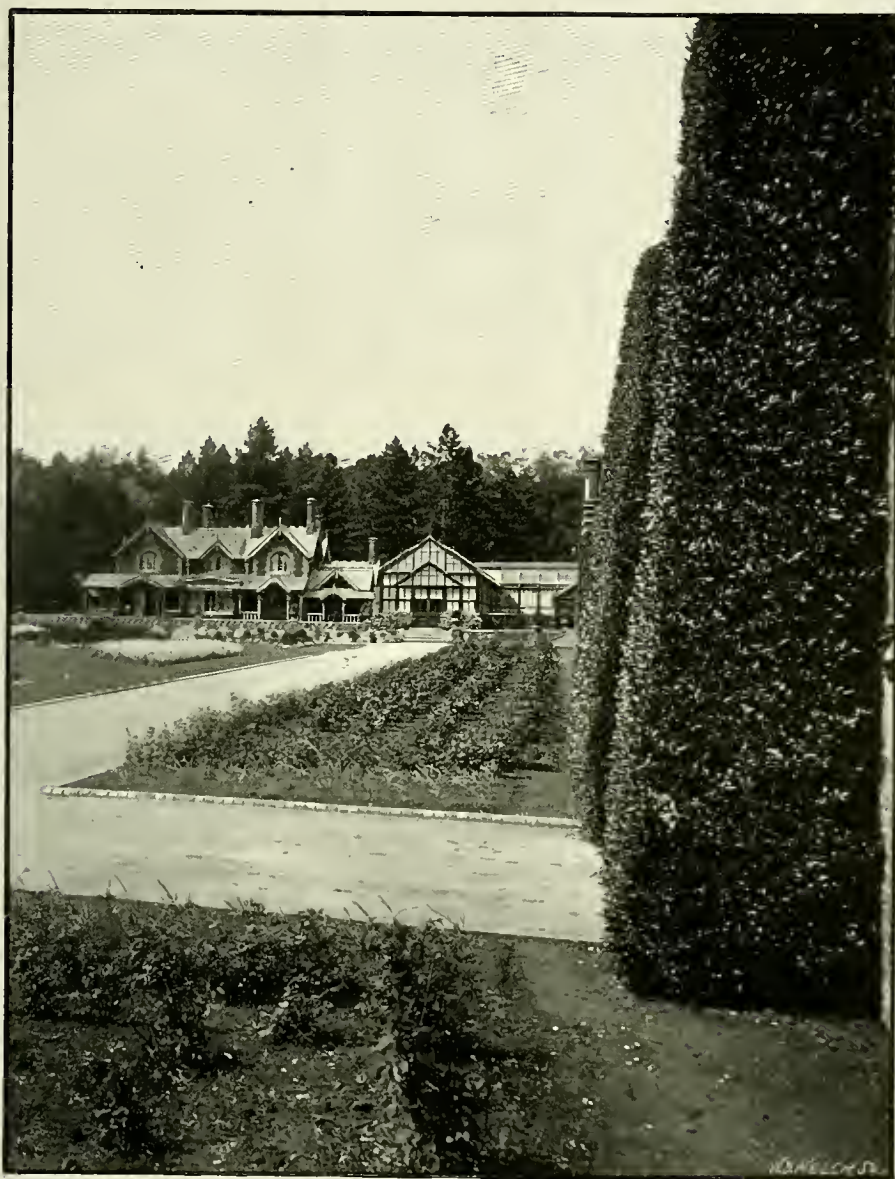


FIG. 151.—THE GARDENER'S RESIDENCE, SANDRINGHAM.

men have sufficient to do to keep all up to the degree of smartness that is maintained.

Reference has been made several times to beds and borders of Roses, but in addition to these there are something like ten thousand plants of the China Rose Hermosa in different parts of the garden. Their Majesties are fond of Roses, and particularly of this one, as it affords a great quantity

Wemyss, at Gosford House, in East Lothian, and was previously in many good gardens, including that at Cardiff Castle. In carrying into effect their Majesties' wishes, he may be trusted to maintain the high state of efficiency the gardens at present exhibit.

We have to thank Mr. Cook for his courtesy in enabling us to take these notes of a truly Royal Establishment.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JUNE 24 { Rose Show and Conference at
Holland House, Kensington
(2 days).
THURSDAY, JUNE 26—Coronation of the King.
FRIDAY, JUNE 27—General Holiday.
SATURDAY, JUNE 28 { Windsor, Eton and District
Rose Show.
Maidstone Rose Club Show.

SALES FOR THE WEEK.

MONDAY, JUNE 23—
Palms, Decorative Plants, Retarded Bulbs, &c., at
67 and 68, Cheapside, E.C., by Protheroe & Morris,
at 12.
MONDAY, JUNE 23—
At Thorpe, near Clacton-on-Sea, Freehold Building
Land, by Protheroe & Morris, at 2.
TUESDAY, JUNE 24—
Special sale of Valuable 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
—62.1°.

ACTUAL TEMPERATURES:—

LONDON.—June 16 (6 P.M.): Max. 58°; Min. 50°.
June 17—Finer.

PROVINCES.—June 16 (6 P.M.): Max. 56°, S.-W.
Ireland: Min. 40°, Shetlands.

Our Coronation Number. OUR contemporaries of the lay press are laying before their readers descriptions of the gorgeous ceremonials attendant on the Coronation of their Majesties, and are filling their columns with accounts of the palaces and fanes where history is being made in such brilliant fashion. It is more within our province to allude to those domestic retreats wherein our Sovereigns may gain some repose from the strain of stately Court functions and the cares and anxieties of Imperial business. The parks and gardens of Windsor, Frogmore, Osborne, Buckingham Palace, Balmoral, Sandringham, Claremont, and Cumberland Lodge have all in their turn, in some cases repeatedly, been described and illustrated in these columns. Each has necessarily some features in common with all the others, but each has some marked characteristic by which it differs from the rest.

Windsor has its glorious park and forest. Frogmore is full of associations, and possesses one of the largest, if not the largest kitchen garden and forcing establishment in the country. These are now under the charge of Mr. MACKELLAR, and are soon, we believe, to be modernised and transformed to suit existing requirements, so that a full description at the present time would be inappropriate, the more so as they have been repeatedly described and illustrated in our columns. Osborne, the marine residence of Queen VICTORIA, enjoys a climate which permits of the growth of specimen trees to a degree of perfection not attainable in inland localities. The gardens of Buckingham Palace astonish those who visit them, who can hardly believe that such scenes could be possible hemmed-in amid the smoky streets of the Metropolis; the illustrations which we were specially permitted to obtain and to publish at the time of the last Jubilee called forth many expressions of surprise. Balmoral is suggestive of the heather and the native forests of Scotch Pine. Claremont is famous for its old-world garden, its noble trees, and lovely pleasure-grounds. Cumberland Lodge, like Hampton Court, is known to every gardener for its famous Vine. For many of the establishments we have mentioned, Frogmore furnishes

supplies of fruit and vegetables on a large scale.

Sandringham, the private residence of their Majesties in Norfolk, is complete in itself, and to its description we, by express permission, devote a large portion of this, our Coronation Number. The illustrations have all been specially prepared for us from photographs taken during the present month by Mr. RALPH; and to Mr. COOK, the KING's gardener, we are specially indebted for facilities in executing our task.

The "Royal" Orchids which we figure, have been represented from specimens recently exhibited. One of them is a variety of the most popular of all Orchids, that originally named after our QUEEN when she claimed the homage of Britons as Princess ALEXANDRA. Although the botanists have decreed that this, by the rule of priority, should be called *Odontoglossum crispum*, yet for many people it will always bear the name of *Odontoglossum Alexandra*.

As for the other contents of this number, we must leave them to speak for themselves; but we may be excused for calling attention also to the number which follows this, and which will be devoted to the historic mansion and grounds of Holland House, and to such details relating to the Rose Conference to be held there as time will permit. That saving clause is essential owing to the complete derangement of ordinary routine, both in the editorial and in the printing office, occasioned by the Coronation, and especially to the very serious curtailment of the time available for the preparation and publication of our weekly issues.

ROYAL HORTICULTURAL SOCIETY.—At a general meeting of the Royal Horticultural Society held on Tuesday, June 10, one hundred and sixty-four new Fellows were elected, among them being the Countess Roberts, the Countess of Selborne, the Dowager Countess of Donoughmore, the Countess Löwenhaupt, Viscountess Galway, Lady Ardilaun, Lady Jane Trefusis, Lady Gwendoline Cecil, Lady Fitzroy, Lady Jekyll, Lady Lechmere, Sir Theophilus Peel, Bart., Sir G. L. Molesworth, and the Dowager Lady Southampton, making a total of seven hundred and fifty-two elected since the beginning of the present year.

—GENERAL FLOWER SHOW, ROSE SHOW, AND CONFERENCE.—The Royal Horticultural Society's great exhibition of Roses and other flowers will be held at Holland House, Kensington (by kind permission of the Earl of ILCHESTER), on June 24 and 25. This meeting will take the place of one of the ordinary fortnightly shows at the Drill Hall, but will in all essentials be conducted on the same lines as the annual shows at the Temple. All classes of plants, flowers, and fruits may be exhibited, but no Roses may be included in any miscellaneous or mixed group. Roses can only be shown under the schedule. Single plants for certificate may be entered at the Secretary's tent on the morning of the 24th before 10.30 A.M. An official catalogue of this show will be issued and distributed gratis among the visitors. It will comprise a short historical sketch of the Royal Horticultural Society, particulars as to the proposed new Horticultural Hall, schedule of Rose prizes, the names and addresses of all the exhibitors of other plants, &c., with the nature of their exhibits, together with a programme of the music to be performed each day by the band of His Majesty's Royal Horse Guards (Blues). The judges will meet at the Secretary's tent

at 10.30 A.M. on June 24, at which hour punctually the tents will be cleared of all the exhibitors and their assistants. The Fruit, Floral, and Orchid Committees will assemble at the Secretary's tent at 11 o'clock punctually. The Conference on "Roses and their Cultivation" will be held at 2.30 P.M., and will be open to all Fellows and visitors. The exhibition will be open to Fellows (showing their tickets), and to others showing Fellows' transferable tickets at 12.30 P.M. on Tuesday, closing at 8 P.M.; and at 9.30 A.M. on Wednesday, closing at 6 P.M. The public will be admitted by payment at 2 P.M. on the 24th, and at 9.30 A.M. on the 25th. The only entrance to the show will be by the great iron gates in Kensington High Street, and the only exit will be by a gate leading into Melbury Road, where carriages may be ordered to wait.

DR. E. GOEZE, our old correspondent, the Botanist-Gardener and Royal Garden Inspector at the University of Griefswald, has been superannuated. The post is at present vacant.

ROYAL BOTANIC GARDEN.—The employés of the Royal Botanic Gardens, Regent's Park, have been granted holidays on both June 26 and 27, in honour of the Coronation.

FLOWERING OF THE VICTORIA REGIA AT THE BOTANIC.—Notwithstanding the late season and absence of bright sunlight, writes the head gardener, Mr. HAWES, the Victoria Regia growing here opened its first flower on the 14th inst., Saturday last, and nearly a month ahead of last year. The leaves are already 5 feet 6 inches in diameter, and another flower will open in a few days.

THE GENERAL HOLIDAY.—It is hoped that on the occasion of the Coronation, nurserymen and employers generally will, so far as possible, not only give their employés a holiday, but will see to it that their pay is not stopped, or the men will not have pleasant recollections of the great event.

THE CORONATION ROSE SHOW.—By the kindness of the Right Hon. the Earl of ILCHESTER, and to benefit the National Horticultural charities, viz., the Gardeners' Royal Benevolent Institution (founded 1838), and the Royal Gardeners' Orphan Fund (founded 1887), visitors to the Coronation Rose Show on June 24 will be enabled to inspect the beautiful gardens and pleasure-grounds at Holland House between 1 and 7 P.M., on payment of not less than one shilling.

FLOWERS IN SEASON.—Some flowers and foliage of the *Cereis Siliquastrum* have been sent us by Mr. COOK, gardener at Erlestoke Park, Westbury. He tells us that there is a specimen in the pleasure grounds at that place between 20 and 30 feet high, that is at the present date covered entirely with its rich purple flowers. It is rare to find as good a tree of such a large size, growing even on the greensand formation.

A STATE BALL IN 1838.—"The QUEEN gave a State ball, the second this season, on Thursday evening at the New Palace. The same State rooms were opened as on the occasion of the former ball, viz., the ball-room, the saloon, the Yellow Drawing-room, the Picture Gallery, the Throne-room, and the Green Drawing-room. The grand staircase and the marble hall contained in all the niches and recesses rare flowers and choice exotics, supplied principally from the Royal Gardens at Kew. Within the upper or Corinthian portico of the grand entrance a magnificent Eastern tent had been erected, 47 feet in length, 32 feet wide, and

22 feet high, composed of crimson cloth, very richly embroidered in gold and silver, and supported by ten pillars of silver. It was illuminated by two large Chinese lanterns, surrounded by six smaller ones, painted and ornamented in the Oriental style. The embroidery on the sides of the tent formed a succession of arches, with a border at the top and bottom, and Indian ornaments in the middle, all massively executed in gold and silver. The drapery forming the roof was equally rich and splendid, and was finished with a handsome border of gold fringe. Large circular ottomans, covered with yellow satin, were placed in the middle of the room, and sofas and chairs at the sides; the latter were handsomely carved and gilt. A very rich carpet covered the floor, and the whole presented a very charming appearance" (*Globe*, May 26, 1838).

MUMMY GARLANDS.—"Several of the royal mummies discovered last year, 1881, at Dayr-el-Baharee were, it will be remembered, found garlanded with flowers, those flowers being, for the most part, in as perfect preservation as the specimen plants in a 'Hortus Siccus.' M. ARTHUR RHONÉ, in a letter to *Le Temps*, has described the extremely curious way in which these garlands are woven. They consist of the petals and sepals of various flowers detached from their stems, and enclosed each in a folded leaf of either the Egyptian Willow (*Salix Salsaf*), or *Mimusops Kummel*, Bruce. The floral ornaments thus devised were then arranged in rows (the points being all set one way), and connected by means of a thread of Date-leaf fibre woven in a kind of chain-stitch. The whole resembles a coarse 'edging' of vegetable lace-work. Among the flowers thus preserved are *Delphinium orientale*, *Nymphaea cœrulea* or *N. Lotus*, *Sesbania ægyptica*, and *Carthamus tinctorius*, so largely employed as a dye by the ancient inhabitants of the Nile valley. The dried fruit, as well as the dried yellow blossom of the *Acacia nilotica*, is likewise present; and mention is also made of the blossom of a species of Water-Melon, now extinct. The foregoing are all interwoven in the garlands in which the mummy of AMEN-HOTEP I. was elaborately swathed. With others of the royal mummies were found fine detached specimens of both kinds of Lotus, the blue and the white, with stems, blossoms, and seed-pods complete. Still more interesting is it to learn that upon the mummy of the priest NEBSOON, maternal grandfather of King PINOTEM II. (XXIst Dynasty), there was found a specimen of the lichen known to botanists as the *Parmelia furfuracea*. This plant is indigenous to the islands of the Greek Archipelago, whence it must have been brought to Egypt at, or before, the period of the Her-Hor Dynasty (B.C. 1100, or B.C. 1200). Under the Arabic name of 'Kheba,' it is sold by the native druggists in Cairo to this day. These frail relics of many a vanished spring, have been arranged for the Boolak Museum with exquisite skill by that eminent traveller and botanist, Dr. SCHWEINFURTH. Classified, mounted, and, so to say, illustrated by modern examples of the same flowers and plants, they fill eleven cases—a collection absolutely unique, and likely ever to remain so. The hues of these Old World flowers are said to be as brilliant as those of their modern prototypes; and, but for the labels which show them to be 3,000 years apart, no ordinary observer could distinguish between those which were buried with the PHAROAHs, and those which were gathered and dried only a few months ago." *Academy*, September 23, 1881; *Trimen's Journal of Botany, New Series*, vol. xi., 1882, p. 317.

ROYAL ORCHIDS.

(See pp. 414, 415, and Supplement.)

THE sun that in its course never sets upon the British Empire shines not on a more loyal people than the inhabitants of the favoured isles which form its centre. In "Society," in commerce, in the humble cottage of the workman, and in every conceivable place and way, opportunity is sought to honour the names of any of our Royal family. Horticulturists and plant-lovers especially delight in naming their newest and best flowers after them, and display considerable ingenuity in attaching their names to suitable new productions.

Her Majesty the Queen has been a special favourite with horticulturists, by reason of her love of flowers and gardening, and the choicest and most beautiful flowers of all kinds have borne one or other of her titles. Scarcely had she settled among us when the charming *Odontoglossum Alexandræ*, still the most popular and favourite Orchid, received her name; and it is a significant proof of our enduring loyalty, that at the last Temple Show Her Majesty could see an exceedingly beautiful form of that same species named *Odontoglossum crispum* "British Queen." Thus the same floral emblem extended to her as Princess of Wales greeted her as our Queen. Such simple tributes to Royalty have more significance than at first appears. They are evidence of wide-spread popularity, for people do not take the names of those they do not revere to attach to the charming flowers they think so much of.

His Majesty the King, ever since the new reign began, has had a great many new Orchids named in his honour, and as in the case of the Queen, the delicately tinted and beautiful bear her name, so the noble and stately looking are dedicated to His Majesty, for the horticulturist does not do these things by hap hazard.

Our supplementary sheet gives coloured illustrations of two of the finest of the many novelties we may call Royal Orchids, the one the very remarkable *Lælia* × *Edward VII.*, obtained by intercrossing *L. Digbyana* and *L. purpurata*, and with regard to which the interesting circumstance is the extraordinary departure from the rest of the batch, this one being a king indeed compared with the others which have flowered. As will be seen, the labellum is extraordinarily developed and fringed, and the charming white, rose, and purple of its flower offer a fine combination. The other is *Lælio-Cattleya* × *Queen Alexandra*, derived from *L.-C.* × *bella* and *C. Triangæi*, the tints of its flower, and especially the fine ruby-crimson of the labellum and its rich yellow disc being very beautiful. Both these were the productions of Messrs. Jas. Veitch & Sons.

Cypripedium × *Emperor of India* (fig. 153) is one of the stateliest of *Cypripediums*. The dorsal sepal is white flushed with rose, and bearing rich purple lines, the remainder of the flower tinged with rose and spotted with dark purple.

Odontoglossum × *Edwardus Rex* (fig. 152) was one of the Temple Show "stars" of this year, and like the others enumerated, received the highest honours. The colour is lemon-yellow with chestnut-red spotting; the lip being white with a large reddish blotch. Both these were produced by Messrs. Sander & Sons.

These are good examples of the many fine new Orchids named to do honour to our King and our Queen, and in no previous age have such Coronation flowers been seen, for until now, by the discoveries of scientific research in horticulture, followed up by the horticulturist, such combinations of the beautiful would have been impossible.

May horticulture long enjoy the patronage of our beloved King and Queen, and may their reign be long and peaceful.

NEW OR NOTEWORTHY PLANTS.

PRIMULA WILSONI, DUNN (SP. N.)*

A NEW CHINESE PRIMROSE.

THERE is now in flower in the rockery of the Royal Botanic Gardens, Kew, a remarkably fine *Primula* from Yunnan, South China, recently presented by Messrs. Veitch. It proves to be a new member of the section *Prolifera*, Pax, to which *P. japonica* belongs, and it is intermediate in habit between that species and the *Javan P. imperialis*. Its stem, 2 to 4 feet high, rises from a rosette of stiff glabrous leaves, and bears five or six whorls of sweet-scented flowers. These are about 1 inch in diameter in cultivated specimens, and of a deep reddish-purple when first expanding, changing later to a pale mauve. Dried specimens had previously been received at Kew from Paris under the name of *P. japonica* (Delavay, No. 314 bis), and later under the name of *P. Poissoni* (a very different plant from the true *P. Poissoni*, Franch. in *Bull. Soc. Bot. Fr.*, xxxiii., 67; *Bot. Mag.*, t. 7216), and from Henry, No. 12121 and 12121A. It was in Dr. Henry's locality that Mr. Wilson, with whose name I have pleasure in associating this fine species, rediscovered the plant, and enabled Messrs. Veitch to introduce it into cultivation. S. T. Dunn.

BOOK NOTICE.

THE BOOK OF ORCHIDS. By W. H. White, F.R.H.S.†

IN spite of all the books which have been published concerning Orchids, there is still among those interested in that popular and interesting class of plants a longing for a handy "pocket" guide to the successful culture of all classes of Orchids. That desire has now been met by the thoroughly practical and comprehensive little volume, *The Book of Orchids*, forming the eighth of the useful series of "Handbooks of Practical Gardening," issued under the general editorship of Mr. Harry Roberts.

This is from the pen of that clever and eminently successful Orchid grower, Mr. W. H. White, for some years the writer of our Orchid Calendar, and who has for the last thirteen years had charge of the fine collection of Orchids belonging to Sir Trevor Lawrence, Bart., and previously for seven years that of the late Mr. Dorman of Sydenham.

The book extends to 118 pages, and from the first to the last scarcely a line is wasted on irrelevant matter. On the other hand, great pains are taken to make clear, even to the most inexperienced, the cultural details, the exposition of which is the chief object of

* *Primula Wilsoni*, Dunn (sp. n.).—A *P. japonica*, A. Gray, calyce interne non farinosa, corollæ ore differenter calloso, habitusque distincta.—Herba glabra efarinosa, rhizomate brevi. Folia oblanceolata, obtusa, basi longe angustata, 4–12 poll. longa, regulariter denticulata, subcoriacea, infra conspicue venulosa. Scapus erectus, 2–4 pedalis, basi $\frac{3}{4}$ – $\frac{1}{2}$ poll. diam. verticillos, 5–6 multifloros involucreatos gerens. Involucri bractee lineares. Flores suavescentes; pedicelli $\frac{3}{4}$ –2 poll. longi, erecti vel apice sub anthesi divergentes. Calyx campanulatus, 3–6 lin. longus, dentibus 5 tertiam partem tubi æquantibus, ovatis, acuminatis, carinatis, corollæ tubi dimidium superantibus. Corolla sub anthesi purpurea, ante decessum pallide lilacina, tubo infundibuliformi, limbo $\frac{3}{4}$ –1 poll. diam., lobis ascendentibus ovatis truncatis, apice creculatis; oris calli 5, triangulares, lobis oppositi, mucronibus 5 separati. Capsula ovalis, calycem æquilongum, tandem fidesens. Hab. in palustribus montium altorum, Yunnan, China, in hort. Anglicanis a cl. Wilson introducta.

† *The Book of Orchids*. By W. H. White, F.R.H.S. (John Lane: London and New York.)

the work. In fact, it is a worker's book, and one which no worker among Orchids should be without.

After some pleasantly written introductory remarks, the author gives valuable articles on "Imported Plants," setting forth the dangers to be expected in dealing with them, and the manner of combating them. "Materials for Potting" comes next, and in it Mr. White advocates the use of Belgian leaf-soil, though he enjoins caution.

Orchid-houses, ventilation, affording water, uncleanness and disease, and botanical Orchids, are the subjects of careful treatment in succeeding chapters; and the remainder of the

CORONATION WREATHS.

WE are all thinking of coronations and crowns, and much has been written on both by many writers. In this paper I propose to confine myself to one small part of the subject—not the Royal Coronation, but to the part that flowers have played in crowns. In royal crowns flowers have had little part; they are and always have been made of the richest material, and adorned with the most precious gems; even the so-called iron crown of Lombardy had in it far more gold and jewels than iron. But in the daily life of many people crowns have

epithet of Aphrodite, the Muses, and the City of Athens; and Aristotle speaks of a crown of thorns or Acantha, but it is in his description of a thorny-backed fish, like our perch or stickleback; and Bacchus is always represented as crowned with Ivy. Nor is there any mention of any such in the Bible, with one or perhaps two curious exceptions, which I will mention presently.

It is when we come to the Romans that we find the more frequent use of flower crowns, and Pliny tells us a good deal about them. He tells us that while "In plaiting and broiding of hearbs and flowers the



FIG. 152.—ODONTOGLOSSUM "EDWARDUS REX." (SEE P. 413.)

book is devoted to the enumeration of the genera in alphabetical order, brief and simple cultural instruction being given under each genus, and where the genus contains several sections requiring different treatment, the leading species in each section are enumerated, and their special requirements set forth.

The work is well printed, and the botanical names are very free from errors, if we except the editor's short preamble on the plant names, in which the compositor seems to have had his own way. Those who peruse the book will marvel how so much useful information could be got into such a small compass. It will be useful to all Orchid growers, experienced and inexperienced; and we need make no further remarks than to advise the investment of the half-a-crown which is the low price charged for it. There are eleven illustrations.

formed a very important part, and the crowns of which I now wish to write have been made of flowers, or if not of flowers, of branches and leaves and grasses; and I shall confine myself strictly to these, omitting all mention of the many crowns used as civil or military honours, but made of gold, silver, or any other material.

When we think how natural it is to weave crowns from flowers, and when we remember how universally flowers are used for such purposes among savage or half-civilised nations, such as the Sandwich and South Sea Islanders, and the inhabitants of other countries where flowers are abundant, it is rather startling to find that there is no mention of such by the early Greek poets, either for public or festive or other purposes. We do meet with "Violet-crowned" as an

ancient Greekes tooke no pleasure;" "No nation under Heaven, nay, put them all together, can show so many sortes of chaplets and coronets, as this one state and people of Rome" (Holland's Translation); and he starts with an example of a crown of leaves given by Romulus. These crowns, though called *coronæ*, were not what we should now call crowns, they did not cover the whole head, and were rather chaplets or fillets than crowns. And though Pliny cites Romulus, it seems almost certain that the familiar use of "*coronæ*" did not come in till late in Roman history, when much attention was paid to all the accessories of luxury and conviviality. The fashion probably came to Rome from the East or from Egypt, where we know such *coronæ* were in constant use; and Pliny has a story of Anthony and Cleopatra

crowned at supper with crowns of flowers, the one for Anthony being purposely poisoned by Cleopatra, not to kill Anthony, but to show him how easily she could do so if she wished. It was at feasts they were most used by the Romans, and they were used with the set purpose of enabling the wearers to keep their heads cool under hard drinking. For this reason they were

As to the flowers which composed these coronæ, they were chiefly Roses and Lilies, but many other things were used.* Parsley was a very favourite plant, probably for the same reason that we use it as a garnish for cold meat, i.e., as a cooling plant, either really or in appearance. Willows were used probably for the ease in weaving them; grasses and Ivy were selected for the

nitentes Malobathro Syrio capillos," but whether the crown was made of the leaves of the Malabathrum, or merely scented with an ointment made from the leaves and flowers, is uncertain.

We may dismiss the use of flower-crowns in England very shortly, though we meet here and there with some slight notices which show that the thing was not quite



FIG. 153.—CYPRIPEDIUM "EMPEROR OF INDIA." (SEE P. 413.)

certainly not of universal use; looked on as signs of revelry, they were disliked by many. Horace disliked them, and has left as his record "displacent nexæ philyra coronæ." But those who used them spent much money on them: the weaving of them was an art that required skilful hands and liberal payment—it was necessary that they should be thin and pliable, and very securely woven; and in many cases the guests wore two, one round the head, and the second round the neck.

same reason, and probably nothing was rejected that was easily woven and looked pretty.

Foreign flowers and leaves were very fashionable, brought chiefly from Syria and India; and special mention is made of Malabathrum, which is supposed to be some species of Cassia; and Horace recalls evenings in which he drank "Coronatus

* "We Romanes are acquainted with very few garden flowers for Guirlands, and know in manner only Violets and Roses." Pliny, Holland's Translation.

unknown. Titania is made to crown her Indian boy with flowers, and to have "rounded the hairy temples of Bottom with a coronet of fresh and fragrant flowers;" and poor Ophelia's "coronet weeds" were the cause of her death. But when we come to the actual daily life of our forefathers, we hear little of such coronets. It has never been in accordance with an Englishman's ideas so to crown himself—he has always considered it effeminate, and has left it to his ladies to crown their heads with flowers;

and if, perchance, he has wished to cool his head heated with wine or reading, he has not taken refuge in a crown of flowers, but in a wet towel or a slice of Cucumber-peel as the better substitute.

But the use of flower-crowns may perhaps be said to have left its mark on our language; corolla is almost an English word; it is a diminutive of corona, and it simply means the beautiful chaplet that surrounds the main body of the flower; and one step further brings us to the English word "corollary," which is the diminutive of corolla, as corolla is of corona.

I said there is only one, or perhaps two, notices of crowns made from flowers or plants in the Bible. The one is found in the crown that faded not away, noticed by St. Paul and St. Peter. The more literal translation is an "amaranthine crown," and so some have translated it; and it refers to the funeral crowns so commonly used by the Romans, and made of Amaranth, i.e., not any particular flower, and least of all, the flower now called Amaranth, but any plant or flower that would keep long, like our Everlastings, and it is very possible that the two Apostles may have seen many such during their residence in Rome. The other crown mentioned is the Crown of Thorns of the Crucifixion—what that was made of we cannot say for certain, it has long been a subject of discussion, and if it was composed of one plant only, the *Paliurus* seems to me the most likely; but it seems more likely that the soldiers in their scorn plucked a bunch of any common weed or weeds that they could lay their hands on, and as so many of the native plants of Palestine are more or less thorny and prickly, the result might well be called a Crown of Thorns. But I must not go further into this part of my subject, it would carry me too far, but I could not pass it by, and may well conclude my paper with it—*Finis coronat opus.* H. N. E.

PLANTS FOR HOUSE DECORATION.

(Continued from p. 395.)

WHEN IN THE HOUSE, AND WHERE?—Plants that remain in the house so as to form continuous supplies by changes from time to time, require close and careful attention to watering. The receptacles in every case should be such that will allow of watering being done. For marble or china vases, for ornamental baskets of rustic work, or of any other material, there should be inner cases of zinc, from which any excess of water can be drawn off by means of a syringe if needs be, or by emptying each one completely when a general change is being made. The inner casing of zinc will protect both marble vases and those of china; the former from staining, the latter from scaling upon the outer surface. To change frequently is good advice to follow, especially with plants that are at all tender. Such stock as is raised from seed may remain as long as they are presentable, and then be thrown away. Green moss is indispensable; it saves excessive crowding, and is better for the plants, preventing them from drying up so rapidly. The positions that the plants occupy must be considered. If gas be the lighting medium, do not if possible allow any plant to be above or near to the gaslights. Most fortunately, however, we now rely

greatly upon the electric light, thus the atmosphere of rooms is much purer, and more congenial to the plants, in that there is less heat to dry them. Where plants stand in windows, one has to contend with the sharp currents of air that are admitted. Say for instance, early in the morning when the early morning work is being done, then frequently the windows are thrown up, and when the outside temperature is low, say at freezing point, it must not, or ought not, to create any wonder if the plants suffer thereby. Later on, of course, the room is comfortable for the rest of the day.

AFTER-TREATMENT.

When plants have done duty in the house they will oftentimes present a sorry appearance upon removal once more to their growing quarters. For a time, such as are still of presentable appearance, should be partially shaded and syringed, but not afforded water at the root so freely, if when brought out it is seen that they are at all sodden. But if, on the other hand, the soil is dry, they should be stood in a vessel of water until the balls are moistened thoroughly, and then, for a time at least, they will not require so much water as previously, for growth being partially arrested there is a smaller demand.

Soft-wooded plants, such as *Pelargoniums*, will be spoiled for a considerable length of time if the stay in the house has been a long one, and the plants will be all the better if kept quite on the dry side. Plants of *Coleus* should be thrown away if at all damaged, it being simply a waste of time to attempt to rehabilitate them.

At times in gardens one is shown a batch of plants that have been used much to their disadvantage, with the accompanying remark that use in the house is the cause of their bad appearance. True, but let some effort be made to remedy this state of things, either by having a larger stock, so that more frequent changes can be made, or by growing plants better adapted to withstand a prolonged stay in apartments. It is far better to strike afresh, such plants as *Crotons*, than to try to rejuvenate them. *Crotons* will, however, when properly prepared for this specific work, withstand a lot of rough usage, and that to a surprising extent. The pots must be literally packed with roots to accomplish this. Take for instance a plant upon a single stem, with foliage well towards the base, and approaching 3 feet in height. Such a plant will probably be in a 32-sized pot. That is too large, not for luxuriant growth perhaps, but decidedly so for the uses for which it is prepared. Let it be, however, in a 48-pot, and it will come out of the ordeal far better, the foliage being firmer, and the growth more woody. Whilst *Crotons* are before us, it may be noted that those varieties stand best that have tough leathery foliage, such as *C. Baronne James de Rothschild*, *C. Andreanus*, and like similar varieties with broad foliage; those with narrow leafage not standing the work so well. *Dracenas*, when used, are selected for their brilliant colouring oftentimes, but this is a mistake from the utilitarian point of view. With a lesser amount of so-called colouring, the greater will be the endurance. In almost every instance the absence of chlorophyll in the leaves means a weakened constitution, which it is of paramount importance to avoid.

TREATMENT OF CUT FLOWERS.

Anything that can be done to bridge over the gulf that exists between the period of cutting flowers and their arrangement in the house should be carefully carried out. It may

be accepted as an invariably good practice to cut all flowers early in the day for at least nine months in the year; whilst at all times outdoor flowers should be cut as early as possible, and that whilst the dew is still upon them. Rosarians who exhibit are known to practice this early cutting, and thereby secure a brighter tint upon their blooms. In cutting thus early, supposing the flowers are not arranged until the afternoon for the evening ensuing, they should at once be put into water until required for use. If they have to be dispatched by rail still adopt this plan, even if not for more than an hour. Market growers do this—they cut the day previous to the market morning, bunch up and put into water at once, keeping the flowers moist overhead, also the ground upon which they stand until packing time, and this system may be safely followed. When flowers are arranged for the dinner-table, a very light spraying overhead after arrangement will be decidedly beneficial. After the flowers have done duty for the first evening, nearly everything can again be used the next day and for days afterwards when of good lasting properties. Yet oftentimes after the one evening's use they are not so used; this is a well-known fact, but it engenders waste. The overcrowding of cut flowers has received a very decided check of late years, thanks to the display of good taste upon the part of those now doing the work, and the examples that are to be seen in our best known exhibitions.

HINTS ON CULTURE.

In order that plants may, as far as possible, resist the exposure and climatic changes with some amount of impunity, it is necessary to consider well their special preparation. In this respect a great deal depends upon the potting. It should be an invariable rule not to employ any plant that has been recently potted, or one that is only partially re-established after potting. The reason for this lies in the fact that the roots that are being made in the fresh soil are more susceptible to injury; they are young roots, tender and immature, hence are more likely to receive a check from either extremes of drought or excess of moisture around them, as well as from the chilling effects that will invariably arise from the latter cause. The fresh soil when wet is colder, from the fact that the roots cannot quickly absorb the moisture. Again, freshly potted plants when moved about for such purposes, are liable to become loosened, and this is a serious drawback to them afterwards. Tall Palms may be cited as a case in point, these will receive a serious check from this cause alone. As regards the potting itself, it should be made obligatory to pot firmly; too much attention can scarcely be given to this work. Plants that have recently been potted will, in all probability, have been given a more generous treatment, both as regards the temperature and atmospheric moisture. This quite unfits them for use for the time being. Such plants as Ferns should never be used when they are pushing up a crop of young fronds. Take for instance an *Adiantum cuneatum* in this condition; its appearance afterwards will tell its own tale. The growth upon this Fern should be hard and wiry when employed in house decoration, just as the cut fronds of the same Fern are that the florists obtain from the market growers. It is frequently said that failures occur with this Maidenhair when grown in rooms, and such failures are a fact. Take, however, an example that is not over-potted, but that has the pot full of roots, and which has been grown in full sunshine.

FORESTRY.

FORESTRY IN BURNHAM BEECHES.

DURING the last few weeks a great deal of attention has been drawn by letters to the leading daily and other papers to what has been termed "Tree Felling in Burnham Beeches." From the alarmist note which has pervaded the correspondence generally, the majority of those interested in this wonderful old woodland, but unacquainted with the real facts of the case, might naturally have imagined that serious injury was being inflicted upon it by ignorant and reckless hands. After perusing a few of the epistles written

property, for the fact that it became a civic possession within comparatively recent times has much to do with it. The acquisition of the property by the Corporation in 1883 will be an event still fresh in the minds of most, for considerable consternation was felt for a time when it became known that the land upon which the forest stood was in the market, and that a possibility existed of its falling into irreverent and unappreciative hands. Happily such a contingency was averted by an arrangement between the Corporation and Sir Henry Peek, by means of which the former were able to acquire the open space known as Burnham Beeches for the use of the public.

Such a plant will have developed stiff fronds with small pinnæ, pale in colour perhaps, but all the better calculated to withstand the dry atmosphere and other not congenial conditions with which it is surrounded. If grown in heat, and moisture, and shade, the pinnæ will be larger, finer in appearance, it is true, but not so durable when exposed to less favourable surroundings. From these cultural hints it will be gleaned that an enduring growth, if not so luxuriant, is an essential factor in the successful cultivation of what are termed "decorative" plants.

It may be accepted as an invariable rule that all plants in proportionately small pots



FIG. 154.—THE TERRACE GARDEN, WINDSOR CASTLE.

will in every instance be the most satisfactory. The only additional care that they need is that of close attention to watering. Take forced plants as a case in point. Hyacinths, Tulips, and Narcissi, these in 48-sized pots will do far more service than if in 32's. Go further even, and take the Chinese Primula, the Cineraria, and other soft-wooded plants; these, when grown in smaller pots, have less vigorous foliage—not so healthy to look at, perhaps, but far more enduring. The finest plants that are to be seen in the plant-houses are not in every case the most useful for decoration, any more than the finest cattle in the homestead, or the finest horses in the stable are best calculated for the hardest work. To come even closer still, is it not a fact that the wiry, closely-knitted man is best adapted to exposure and hard work? *Jas. Hudson, Gunnersbury.*

by the more pessimistic of the correspondents, a true lover of sylvan scenery had little difficulty in drawing a vivid mental picture of a scene similar to those with which descriptions of forest clearings in the United States and Canada have made us familiar. "Devastated areas," "Birches cut down by hundreds," "Beauty and mystery of the place absolutely destroyed," &c., are terms sufficiently strong to lead one to the conclusion that serious damage was being inflicted upon this noble old relic of a past age; and it was with a feeling not unmixed with anxiety that a visit was recently paid to the Beeches, in order to ascertain what had actually been done in the matter.

To properly understand what has actually taken place, it is necessary to go back a few years in the history of this London Corporation

This change of ownership marked two important events in the history of the Beeches. One of these was the guarantee that the existence of the Beeches should continue in its natural condition for all future time; the other was, that it became public instead of private property. The former of these events indirectly led to a system of management being adopted which would, if allowed to continue, have frustrated the very object it was intended to attain. This system was one which left everything absolutely to Nature, and which prohibited interference in any shape or form with the natural growth of the woodland. At first sight, this might seem to be all that was necessary to carry out the views of the authorities. But a circumstance had to be reckoned with which few anticipated at the time. This was the abundant growth of seedling trees

which sprung up (as they had been in the habit of doing for hundreds of years), and threatened to ruin, if they did not actually destroy, the old monarchs of the wood. When the Beeches were in private hands, attention was always paid to this seedling growth, and it was cut away or thinned from time to time, as the necessity for it arose. But when the change of ownership from the private individual to the public authority came about, this necessary work was at once prohibited under a mistaken idea that it was destroying the natural character of the wood.

No doubt this periodical thinning did, to some extent, interfere with the character of the place as a natural forest. But a choice

obliterated by a mass of spindly seedlings and a tangle of Brambles and Thorns. To consider such a state of things "natural beauty" was surely a gross misinterpretation of all that is worth admiring in Nature, and fortunately for Burnham Beeches and the general public who admire them, the committee wisely decided to take action before irreparable damage was done.

Fortunately, it so happened that they were able to carry out their plans with the assistance of a very able authority on landscape gardening. Within a stone's-throw of the Beeches lives Mr. Harry Veitch, and with characteristic generosity he acceded to a request of the committee that he should super-

as naturally as possible. In fact, if an error has been committed at all, it has been on the side of excessive caution rather than in reckless disregard of correct taste and picturesque beauty.

As a matter of fact, the whole of the work done during the past winter was so obviously necessary, that none without an ulterior object in view, could possibly have objected to it. The only cause for regret is, that those who have the real interests of this unique old forest at heart, and do all in their power to preserve it for the enjoyment of both present and future generations, should be exposed to the attacks of ill-informed persons posing in the garb of genuine lovers of Nature. *Fagus*.



FIG. 155.—VIEW IN WINDSOR FOREST.

had to be made between two evils: the one of allowing the wood to become a facsimile of hundreds of ordinary woodlands in the country by the extermination of the old trees, and the blocking up of all open spaces; or the other, of saving the old pollards at the expense of a young generation, which experience proves can always be replaced when wanted.

Guided or influenced by the representations of a small, but not altogether disinterested section of the public, the committee of management chose the former of these evils, and for a number of years nothing was done in the way of thinning or clearing. The result was exactly what those experienced in such matters had anticipated. The picturesque grouping of the old trees, the alternation of thicket and open space, and the "splendid isolation" of many a noted specimen, became, or were in danger of becoming, entirely

visé the work as it went on, although this entailed a certain amount of inconvenience to himself. The result has been that Burnham Beeches, or at least a portion of them, have been cleared of a good deal of superfluous rubbish, with the best results. The most convincing proof of this lies in the fact that it is almost impossible to detect where the axe and bill-hook have been used, except by comparison with parts most in need of similar treatment. In fact, the time of the keeper is greatly taken up in answering anxious inquiries as to where the reputed "vandalism" has been penetrated, for it is impossible to discover it unaided. No trees have been removed, simply saplings which threatened to destroy the open character of the wood, or the venerable beauty of the old pollards, and where *bonâ fide* thinning of young groups has been done the remaining trees have been distributed

COLONIAL NOTES.

CECIL RHODES AS A HORTICULTURIST.

At the present time, when the name of Mr. Rhodes is still in the thoughts and on the lips of millions of our fellow countrymen, a few words on some of his horticultural work in South Africa, published in the leading horticultural journal, will, I venture to think, prove of interest. The great majority of English people interested in horticulture and arboriculture little dream that the deceased gentleman was able to spare much time from his other great works in the pursuit of a hobby of this kind. The fact remains that he did spare a great deal of time for it, and lived to see a vast amount of horticultural work carried out in the country of his adoption.

I will take as the subject of this article, Kenilworth, the property of the great De



FIG. 156.—VIEW IN THE GARDENS OF BUCKINGHAM PALACE.

Beers Diamond Mining Company. It is situated a couple of miles from Kimberley, where Mr. Rhodes laid the foundation of his enormous fortune, and formulated those schemes for the great British advance northward which ended in placing thousands of miles of territory under the British flag, and gained for its originator the proud and well-earned title of Empire Builder. Kenilworth is situated on a deep red soil, very much like what we meet with over a great part of Devonshire, but more sandy. Fourteen or fifteen years ago the land now under cultivation was a part of the open veldt. Now, a pretty village of some six or seven hundred inhabitants nestles snugly under great avenues of Eucalyptus and Casuarinas, and hundreds of acres have been laid out as garden, farm, or forest. It is divided into several blocks, orchard, nursery, farm, and kitchen garden. All this work would be practically impossible but for the plentiful supply of water obtained from the Premier Mine, Wesselsfontein, one of the De Beers Consolidated Mines.

Perhaps the most interesting spot to English gardeners is the part set aside for orchard work. Some thirteen years ago the manager, Mr. F. Fenner, commenced operations here by planting some thousands of fruit-trees, the kinds being Apples, Pears, Plums, Peaches, Nectarines, Apricots, Figs, Oranges, Naartjes, Lemons, Almonds, Cherries, Quinces, and Pomegranates. The orchard is about 600 yards square, and planted on every side with Eucalyptus, Casuarina, or Cupressus macrocarpa. The "hedges" have attained magnificent proportions, some of the Eucalyptus towering away 60 and 70 feet in height. The Casuarina is a beautiful tree, and forms a fine shelter, but it has one bad fault, it is a great robber, impoverishing the soil for a long distance away. The appearance of everything is most marked when compared with others of the same kind planted near Eucalyptus or Cupressus. The Cupressus is too well known at home to need any description here, except to note that it does remarkably well and grows at a pace that would astonish English gardeners. Only a small portion of the fruit trees planted have come out from Europe, the greater part coming from Australia, the seasons suiting them so much better. Only here and there has a downright failure to be reported. A notable instance being Cherries. They will not do at all. Peaches, Nectarines, Apricots, and Almonds do remarkably well, the Peaches alone being worth a long journey to see. The past season has not been one of the best, but the crop of 1900-01, December and January, which was the first I had the privilege of witnessing, was a grand show. Apricots start the season, and these were picked by the hundred thousand, 200,000 of Apricots alone being sent away in that season to the mine compounds, while as many as 60,000 Peaches have been dispatched in a single day.

Apples, Pears, and Plums do very well, the Japanese Plum especially; while among Pears, our old friends at home, Williams' Bon Chrétien, Marie Louise, and Louise Bonne of Jersey, do grandly, seeming to delight in the tropical heat. Pomegranates and Quinces must be grown by the ton, and both fruits reach a very large size. At the present time (first week in May) enormous crops of Oranges, Naartjes (Citrus), and Lemons are fast ripening off, and bending the branches to the ground under their weight.

Several vineries of 400 and 600 yards long each have borne heavy crops of Grapes in many varieties. Tons of Grapes go every season into the mine compounds, being eagerly

bought up by the natives. Grapes and every other kind of surplus fruit are sold at a very low price.

Two great enemies the fruit crop has to contend with here are locusts and the hailstorms. I place the locusts first, as they simply clear everything before them, leaving nothing but the stones of Peaches or Apricots hanging to the trees. It is really wonderful how quickly the trees recover from their attacks; they break out again, and grow away strongly immediately after the first good rain. Hailstorms do great damage, cutting the trees to pieces. A hailstorm here is a far different thing to what we are used to in England; often the "stones" are pieces of ice an inch or more square.

On the plot of ground set apart for the cultivation of vegetables some splendid crops are to be seen, many kinds being grown with great success. This department requires a deal of attention, as any neglect in the regular watering of the crops would be fatal, the great heat we experience here about Christmas burning everything up. The veldt all around gets as bare and as hard as an English road.

In the nursery Mr. Fenner has a great quantity of all kinds of trees suitable to the district; hundreds of thousands of such kinds as Eucalyptus, Casuarina, Grevillea, &c.

Any reference to Kenilworth, and the work carried out there by the late Mr. Rhodes, would be incomplete now without a description of the Siege Avenue. This, like almost all the other works of Mr. Rhodes, is a big affair. The avenue is $1\frac{1}{4}$ mile long, and will consist, when properly finished, of fourteen rows of trees, Eucalyptus, Casuarina, Orange, and Pepper. In the centre of the avenue an enormous vinery has been built, running the whole length. It is span-roofed, and forms an admirable carriage drive, the leaves of the Vines forming a welcome shade in the hot days of summer. Some thousands of Vines have already been planted, and made a very good start, the growth of the past season being all that could be desired.

This avenue and its vinery will be a great sight in a couple of years' time, when the Vines come into full bearing, and will be worth a long journey to see. It is called Siege Avenue from the fact that it was commenced and a great amount of work done on it during the historic siege of Kimberley, the men and "boys" engaged being often under the enemy's shell fire. Gardening work is rarely performed under such difficulties. Work was provided there for about 1500 natives, when work on the mines had to cease for want of mining material.

The great interest which the late Mr. Rhodes took in horticultural work can be gauged by the fact that he was often to be seen at the garden as early as 5 o'clock in the morning, having had a journey of 3 or 4 miles to accomplish before reaching there. T. Foote, P.O. Box 170, Kimberley, S. Africa.

CORONATION ITEMS.

TURNFORD HALL NURSERIES, NEAR BROXBORNE, HERTS.—The most important crop with us, of course, will be the Lily of the Valley; of these we propose to place a quantity on the market for Coronation week. These blooms will, of course, all be produced from frozen crowns which have been stored in our own refrigerators since last January; they take us about twenty days to produce, from the time of their leaving the refrigerator.

Another feature will be the numbers of *Lilium longiflorum* blooms, which are not retarded and are in their natural season, but

the blooms of the varieties *L. l. album* and *L. l. rubrum* will be produced from bulbs which were placed in the refrigerator in February, 1901, or about sixteen months ago. *Azalea mollis* is another very effective plant, which will be much in evidence, its delicate shades enabling it to be used almost anywhere. *Azalea mollis* we have had in bloom continuously since August last—thanks to the refrigerator. *Spiræas* will also be much in evidence, and these plants have also been retarded.

Turning now to the Orchids, we shall place two or three thousand blooms of *Odontoglossum crispum* on the market, and no doubt there will be a great demand for this beautiful and effective Orchid. *Cattleyas* will not be so plentiful, but there should be a good sprinkling of *Cattleya Mossiae*, *C. Mendeli*, and *C. Gaskelliana*.

Palms we expect a very large demand for, ranging in prices from 2s. 6d. to £30 each; other plants are *Hydrangeas*, *Dr. Hogg* and *Hortensia*; Ferns in variety, *Davallia bullata* in many different shapes, such as Monkeys, Frogs, Pagodas, Storks, Pigeons, Chinese Junks, and other designs; *Asparagus Sprengeri* and *A. plumosus*, *Dracenas*, *Crotons*, *Pandanus Veitchii*, *Aralias*, &c., the brilliant *Kalanchoe flammea*, *Stephanotis floribunda*, *Eucharis grandiflora*, *Araucaria excelsa*, and *Aspidistras*. Thomas Rochford and Sons.

Perhaps the most striking feature has been the increase in demand for large Palms. The call for sizes from 5 to 8 ft. is quite exceptional. This appears to come principally from the theatres, restaurants, hotels, and the houses mostly occupied in the furnishing trade. The demand also for Orchid flowers and other high class blooms, such as *Malmaison Carnations*, has also been of quite an unprecedented nature, and the prices of these choicer products have gone up very considerably in consequence. Amongst the more generally employed plants, *Marguerites*, *Hydrangeas*, and hanging plants for window-box decoration, we have found it impossible to keep pace with the demand. Hugh Low & Co.

HOME CORRESPONDENCE.

LABELS.—Referring to your paragraph on p. 357, I may say that I have been for the past year perfecting my metal label generally known as the "Chandler Plant Label," so as to include the printing or embossing very plainly of the name of the Rose, fruit-tree, or plant, cheaply on a permanent label to be attached to a plant when sent out from the nursery, and that I hope to introduce this improvement before the autumn. The price will be very much lower than that stated by you, and the name of the nurseryman sending out the Roses, fruit-trees, or plants, will be also imprinted on the label. I will send you samples of the labels so soon as they are ready. Alfred Chandler, Devon Rosery, Torquay.

THE NAVAL ORANGE IN CALIFORNIA.—Referring to Mr. Tidmarsh's note on p. 225 of your issue of April 5, I write to say that the Bahia, or as it is here called the Washington Navel, is the principal shipping Orange of California, furnishing over three-fourths of the 20,000 train-car loads of Oranges exported from California in the season of 1899-1900. With us it is a good bearer, but in Florida it is said to produce but shyly. It is by no means an infrequent occurrence to find a second Orange at the apex of the first, and all stages of development between the ordinary "navel" and the well-developed second Orange are often found. Writing in *Meehans' Monthly*, some time ago (the reference is not accessible to me), Prof. W. W. Bailey, of

Brown University, says :—" We take it that in the Navel Orange the branch or shoot continues to grow, producing another tier of carpels above or within the first set. The lower set is more vigorous, presses upon and crowds the inner, forming, at last, the characteristic dimple or navel which gives the fruit its name. Such proliferation of a flower-branch is seen any day in the two or more storied in-

"Orange," pp. 1152 to 1160, together with other information of interest and value to Orange-growers. A more extended and thoroughly reliable account of the Orange industry in California is contained in Wickson's *Californian Fruits and How to Grow Them*, ed. 3, San Francisco, Pacific Rural Press. Joseph Burt Davy, Assistant Botanist, Agricultural Experiment Station, Berkeley, California.

roughly, I should imagine that care in applying water and not too large pots are very necessary conditions. That it will be more sought after there can be no question, for already it has been greatly admired by those who have been to the front. Classified as a herbaceous plant, it would from appearance want a most favoured and warm situation outdoors. *Orchid*.

FUNGUS ON BEGONIA GLOIRE DE LORRAINE.—

In reply to enquiry (*Gardeners' Chronicle*, p. 329), the fungus referred to is probably the same as that which causes what is generally termed "damping," and which often proves so destructive in the propagating-house. It is a very fine thread-like fungus which spreads rapidly, and destroys all tender subjects it may come in contact with. It is only a moist stagnant atmosphere that is favourable to its development, but in any place where the germs once get established it is most difficult to eradicate it. Most propagators have had some experience of this deadly pest. If taken in time it may be checked. I have known it spread on an open stage, but it is in the close frame that it proves the most destructive. The only way to check its progress is to remove any pot of cuttings that may be affected, and stir in some hot ashes in the plunging material, and some dry sand made as hot as it is safe to use it, shaken through the affected pot may save any cuttings, &c., that it has not touched; but unless it is something very choice it will be better to destroy them. I have known it very troublesome among seedling tuberous Begonias; where the leaves come close on to the surface of the soil it spreads most, and great care is required to check its progress. A. Hemsley.

HARDY GERANIUMS.—I have to thank your valued contributor, "Corycius senex," and some other readers of the *Gard. Chron.*, who have written me supplementing what I said about the "hardy Geraniums" in a recent issue. I have not at present the pleasure of possessing *G. platypetalum*, a species which appears to be but little grown, even in nurseries, and I am indebted to your correspondent for reminding me of it. Our Dusky Cranesbill is so plentiful in a wild state in this locality that I have not this quaintly pretty plant among my garden flowers, all one's space being needed for flowers which cannot be seen wild within a mile or so; it is, however, worthy of all said of it by "Corycius senex" in his note and in his recent enjoyable article. Another species omitted has been kindly recalled to me by a lady reader; this is *G. striatum*, a pretty Cranesbill, which I had at one time, but which appears to have been lost in the course of some garden alterations, which has once more found its way into my garden through the courtesy of this lady. It has been accompanied by the rather tender *G. canariense*, a bright Geranium, welcomed among the occupants of my greenhouse. S. Arnott, Carsethorn by Dumfries, N.B.

CROSSING THE HIPPEASTRUM WITH CLIVIA.

—If Mr. Chapman and Dr. Bonavia have really effected a cross between these two plants, they are to be congratulated. My own efforts in that direction have not been successful. It will be interesting to hear what Mr. Chapman's plants are like when they flower. His exhibit of Hippeastrums at the Temple Show were noteworthy for the broad segments of their massive blooms. T. H. Slade.

THE WEATHER AND THE FRUIT CROPS.

Several correspondents of the *Gardeners' Chronicle* have given distressing accounts of the prospects of the fruit crop this year. In my part of Devonshire, the fruit has not quite escaped injury, as 6° and more of frost was experienced; but fortunately at Poltimore, the air was unusually dry during April and May, albeit very cold. Red Currants, also Gooseberries, have suffered slightly from the frost. I have seldom seen Strawberries looking better, the rains during the past week having greatly benefited them. Fruit on Plum trees is very thin. Pears will be a light crop,



FIG. 157.—VIEW IN THE GREAT PARK, WINDSOR.

florescence of Chinese Primroses; or in the still more striking cases where a Cherry, Rose, or Apple-blossom continues a leafy shoot through its middle." The figures referred to by Mr. Tidmarsh are to be found on p. 56 of a publication of the California State Board of Horticulture, entitled *Culture of the Citrus in California*, by the late B. M. Lelong, Secretary, "assisted by experienced horticulturists"; it was published in 1900. Another illustration will be found in Dr. H. J. Webber's article on "Citrus" in *Bailey's Cyclopædia of American Horticulture*, p. 322. Another account of the Bahia occurs in the same work under

GERBERA JAMESONI.—May I supplement the remarks of your correspondents, "H. J. R., Banger," and Mr. Heaton Nichols, on the above plant in a recent issue of the *Gardeners' Chronicle*. Knowing that the plant was flowering in the Wavertree Botanical Gardens, Liverpool, for the first time, I called on Mr. Guttridge, who kindly pointed it out to me. It had been growing in an ordinary greenhouse, and potted in Kent loam, a little leaf-mould and coarse sand. The plant, although small, had a straight spike some 2 feet long, the flowers being of a vermilion colour. Until plants are established tho-

and I fear Apples will not be plentiful. Peaches and Nectarines are a heavy crop, but the trees have suffered much from blister. Our Potatoes have escaped the frost, and have a thrifty appearance; the first tubers were lifted in the open border on June 3. T. H. Slade, *Poltimore*.

ROAD-SIDE FRUIT TREES.—Our old friend, Mr. Peter Barr, pokes a little fun over the proposal to plant fruit trees by the roadsides and in hedgerows. Perhaps ridicule is the best possible check to administer to what is a poor fad at the best, and is as far removed as any suggestion well can be from solving the great problem how best to grow such fruit at home as shall enable us to compete in our own markets with colonial products. We have been for many years growing far too much rubbish, and a survey of markets and shops in the hardy fruit season yet tells too forcibly of how much rubbish we grow still. What benefit to British fruit culture as an industry could result had we hundreds of miles of roadsides planted with Apple, Pear, and Plum trees, except that it would help to flood our markets with worthless produce [?], at which no genuine market salesman would look for a moment, but would rather turn from with disgust. If we have no better panacea for our home shortcomings in relation to hardy fruit production than is presented in the roadside planting proposal, then the sooner we fling up our hands and cry peccavimus the better. What we want to enable us to compete in our markets with high class imported fruit is high-class culture and first-class varieties. What of culture can be given to roadside trees? and in this country what of roadside fruit would be safe from depredation? Some fruit-growers here and there are doing their best to meet this competition. Such an one is Mr. Barnfield, of Bedford, who put down a few years ago some 90 acres of fruit trees, and has now one of the prettiest breadths to be seen in the kingdom, just below the Feltham Industrial Schools. Such practical growers as he would laugh to scorn the roadside proposal. A. D.

DISEASE OF LILIUM CANDIDUM.—Mr. Jenkins' note on p. 379 will be interesting to all cultivators of Lilies, and the experiment will be valuable if it leads to success in combating this tiresome disease. Perhaps more might be done in this direction if gardeners would compare notes freely as to their success, or lack of it, in cultivating this beautiful Lily. Owing to the disease, and possibly other causes too, the plant had almost died out in these gardens; the few that remained eight years ago were too weak to flower. With better cultivation they have increased in strength, and are this year showing several fairly strong flower-stems; they have not been so much diseased as in former years, neither have others which have been brought from other gardens, and I cannot assign any reason for this, unless it is increased strength due to the application of farmyard-manure near to the roots without disturbing them. The disease generally appears here early in April, and gradually gets worse until at flowering time scarcely a leaf is green; this season it commenced as usual, but did not increase. If this is owing to climatal reasons, I cannot understand why it is so, as both April and May have been much cooler and wetter than usual, though we have had very little actual frost. Some of the finest I have seen in these parts are growing close to a house on the south side, where the soil is naturally a light sandy loam. A few years since I imitated these conditions as closely as possible, and purchased a fresh stock of bulbs to plant for trial; these grew fairly well the first season, but have gradually dwindled away until they are now weaker than the original stock that was here before. Another lot I obtained from Kent, where I saw them growing upwards of 4 feet high, and flowering beautifully; these stood close on the south side of a house, and when dug up the bulbs proved to be quite 6 inches under the surface. But deep planting is not the

secret of success, because the best clump I have here has the bulbs almost on the surface; this has increased from one root five years ago until it has twelve flower-stems this season, some of them 3½ feet high, and very strong. This clump had to be removed when in full growth in April, 1901, owing to alterations that were being made; it continued to grow, however, much to my surprise, and is now the strongest and best I have, nothing special having been afforded it in the matter of soil or anything else—yet most gardeners would hesitate before moving Lilies at that season. When I was a boy, in Kent, this plant seemed to grow and flower freely under ordinary kind of treatment, and I do not remember having observed the Lily-disease in Kent either then or since. I well remember finding a large Lily bulb rolling about on the surface of the ground, and in a very shrivelled condition. I cannot say at what part of the year, but it was hot, dry weather; this I soaked with water, and replanted in my own little garden, which was in a dry, shady spot near some trees, and it afterwards developed into a fine strong plant, although it grew weakly for the first year or two. I have written the above account of failures and successes, hoping other growers may do likewise, and that some method of Lily-cultivation may be evolved which will secure strength in the plants, and thus better enable them to resist the disease. W. H. Divers, *Belvoir Castle Gardens, Grantham*.

YORK GALA.—Your correspondent in his notes on this show made a pardonable error in the fruit classes. Others were misled on the same point through the prize cards getting misplaced. The first prize for three bunches of Black Grapes was won by Mr. John Hlickson, nurseryman and fruit-grower, Clifford, Boston Spa, Yorks. This gentleman has several times been first in this class at York. He is probably one of, if not the oldest fruit-grower in this county. His vineries are simply constructed, he having been not only his own designer, but to a large extent, his own builder. I have often seen his Grape crops during the past twenty-five years, and must say they have always been very good in every sense, Hambros in particular. It may be worth mentioning that his early life was spent in private gardens, he having filled several responsible positions as head gardener, the last one being at Townley Park, near Burnley, in Lancashire. He began his gardening career in 1829; yet he is now as erect and active as a man in his prime. During his working life he has met most of the gardening celebrities of the latter half of the nineteenth century, and his memory being clear and his imagination not too vivid, it is a treat to lovers of garden folklore to hear his comments upon them and their work. In 1850 and 1851 he was foreman at Duncombe Park, near Helmsley, in Yorks, to the late Mr. M. Rochford, father of the well-known family of fruit-growers and nurserymen of Turnford and other places. H. J. C., *Grimston Gardens, Tadcaster*.

STOCK-TAKING FOR MAY.

As this is being written, our swords are sheathed, our flag droops idly, our brows are laurel-wreathed—there is Peace with Honour, and the war is ended. Men are now engaged in pushing commerce to the uttermost ends of civilised South Africa, and this to improve the coming monthly returns to be issued by the Board of Trade. The returns issued on Saturday last show an increase in imports to the amount of nearly a million sterling—the exports a decline of half a million. The value of last month's imports was £43,353,705, against £42,426,759 for May, 1901—an increase of £926,946; of this sum £836,216 represents the increase of value

on dutiable articles of food. The "summary" table presents us with the following entries:—

| IMPORTS. | 1901. | 1902. | Difference. |
|--|------------|------------|-------------|
| | £ | £ | £ |
| Total value ... | 42,426,759 | 43,353,705 | +926,946 |
| (A.) Articles of food and drink—duty free ... | 7,916,023 | 8,643,882 | +727,859 |
| (B.) Articles of food & drink—dutiable ... | 8,104,491 | 8,945,707 | +836,216 |
| Raw materials for textile manufactures ... | 6,793,664 | 5,973,170 | —820,494 |
| Raw materials for sundry industries and manufactures ... | 5,023,837 | 4,319,410 | —704,427 |
| (A.) Miscellaneous articles ... | 1,235,340 | 1,556,912 | +321,572 |
| (B.) Parcel Post ... | 121,518 | 138,554 | +14,006 |

The figures relating to the imports of fruits, roots, and vegetables, continue to be of the now usually astonishing character:—

| IMPORTS. | 1901. | 1902. | Difference. |
|---|-----------|---------|-------------|
| | Cwt. | Cwt. | Cwt. |
| Fruits, raw:— | | | |
| Apples ... | 75,842 | 70,395 | —5,447 |
| Apricots and Peaches ... | 155 | 1,024 | +871 |
| Bananas... bunches ... | 223,939 | 242,758 | +18,819 |
| Cherries ... | 5,237 | 16,546 | +11,309 |
| Gooseberries ... | 328 | 525 | +197 |
| Grapes ... | 936 | 1,347 | +411 |
| Lemons ... | 149,715 | 88,044 | —61,671 |
| Nuts—Almonds ... | 5,498 | 6,035 | +537 |
| Others, used as food ... | 46,270 | 69,791 | +23,521 |
| Oranges... .. | 523,889 | 752,814 | +228,925 |
| Pears ... | 165 | 417 | +252 |
| Plums ... | | | |
| Strawberries ... | 3,255 | 1,834 | —1,361 |
| Unenumerated, raw... .. | 4,548 | 5,848 | +1,300 |
| Fruits, dried:— | | | |
| Currants, for home consumption ... | 43,005 | 61,633 | +18,628 |
| Raisins „ ... | 18,399 | 21,589 | +3,190 |
| Vegetables, raw:— | | | |
| Onions ... bush. ... | 602,219 | 494,656 | —107,563 |
| Potatoes ... cwt. ... | 1,037,217 | 586,022 | —451,195 |
| Tomatoes... .. | 33,590 | 58,152 | +24,562 |
| Vegetables, raw, unenumerated ... value | £61,596 | £61,187 | —£409 |

Everything points to an increase at the Cape of the area devoted to fruit culture, and that too of all descriptions; and this may meet with encouragement by the lowering of freight charges, which it is insisted tend at present to curtail shipments. The imports for the past five months are given at £222,135,337, against £220,724,360 for the same period in the preceding year—showing an increase of £1,410,977. Passing now to—

EXPORTS,

these for last month are placed at £22,831,974, against £23,336,662 for the same period last year, thus showing a decrease of £504,688.

TRADE NOTICE.

THE HEATING OF THE NEW PORTION OF THE VICTORIA AND ALBERT MUSEUM.—Messrs. J. Weeks & Co. inform us that they have been favoured with the order to warm the East Galleries of the new portion of the Victoria and Albert Museum at South Kensington.;

ROSE HILL NURSERIES, YARM.—We beg to give you formal notice that in conformity with the terms of her late husband's will, Mrs. Hedley has taken over the nursery and seedsmen's business, so long and success-

fully carried on by the late Mr. William Hedley, Rose Hill Nurseries, Yarm. Mrs. Hedley will in future conduct the business under the same name as heretofore, Mr. Robert Hedley acting as manager, combined with that of auctioneer and valuer.

WILLIAM BULL & SONS.—We are requested to state that the business conducted by the late William Bull, of King's Road, Chelsea, will in future be carried on by Mr. Bull's two sons, William and Edward, under the style of William Bull & Sons.

The Week's Work.

PLANTS UNDER GLASS.

By J. C. TALLACK, Gardener to E. MILLER MUNDY, Esq., Shipley Hall, Derby.

Humeas.—Where these handsome plants are grown, seeds should now be sown in gentle heat, using a light and sandy mixture of soil, and shading the seedpot or pan heavily until the plants appear. It is important that new seeds shall be sown, and seedsmen appear to have realised this fact more fully during recent years, although for many years it seemed to be impossible to buy seeds of good germinating power. It should not be forgotten that there are two varieties, *H. elegans* and *H. e. purpurea*, each handsome in its own particular shade of plume, and equally worthy of cultivation.

Trachelium caeruleum.—A very pretty and useful plant for the conservatory, its light and elegant appearance lighting up other arrangements of plants, and providing, from its colour, a sense of repose and coolness. Autumn raised seedlings will now be ready for being transferred to the flowering pots, and will need rather careful handling, for any rough treatment of the roots or excess of water after being potted may lead to the collapse of the plants, which otherwise are very easily grown. They will grow in almost any kind of garden soil, which should have some sand and a small quantity of decayed cow-manure mixed with it.

Bouvardias.—If these are to be grown on the planting-out method, it will now be time to prepare for the job. A spot on a sunny border should have been specially prepared by digging-in some well decayed manure and leaf-soil, which will ensure them being lifted with good balls of soil attached at potting time. Pot-grown plants will soon be ready to transfer to their flowering-pots, and if well managed afterwards, they will get no check at the roots during the rest of the season. Which-ever method is adopted, the syringe should be freely used on the afternoons of bright sunny days in order to keep red-spider in check and to encourage growth, for both of which purposes clean soft-water is better than clean water.

Primulas.—Plants of the double-flowered type which have been earthed or mossed up so as to produce pieces for propagating, should now be ready for division, and may be cut into pieces with one crown each, potted in leaf-soil, and stood in a pit with gentle bottom-heat, in which they will soon become re-established. Seedlings of all the Chinese sections which are forward enough, should be pricked off into pans of sandy soil, and given a distance that will allow of good development before being potted. I do not care to transfer small seedlings singly into tiny pots, as they do not go away nearly so freely as those which are pricked off in a larger body of soil.

Gardenias.—The early-struck cuttings may now have their second shift, but should not be advanced more than a couple of sizes as regards pot-room, my experience being that big shifts are apt to be injurious, and I prefer to give one extra shift during the season. The main batch of cuttings will now, too, be ready for potting off.

Liliums.—Pot plants of *L. auratum* and *L. lancifolium* will probably be showing roots above the soil. When these appear, the plants

should be top-dressed with a nice mixture of sweet soil, sand, and manure, for the encouragement of these roots means much in development of flowers.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Apples and Pears.—If extra-fine fruits are required, and there are good crops already set, thinning should be freely carried out, keeping in view the size of the fruits in each case, and reducing the fruits on each spur to one or two, the best shaped ones being retained. At Bicton many varieties of Apples are cropped heavily, notably King, Ribston, and Sturmer Pippins, Lane's Prince Albert, Golden Spire, Duchess of Oldenburg, Warner's King, and several others, all of which will require one-half of the fruit to be removed. Speaking generally, the finest fruit is obtained from bushes, pyramids, and espaliers, on which thinning is easily performed. Pears are not a heavy crop. Where labour will allow, frequent applications of manure-water or a mulch of some sort over the roots will do good.

Plums locally are a good crop even on orchard standards, but principally consists of Denyer's Victoria, a variety which seldom fails to crop. Plums should be thinned before they become a great strain on the energy of the tree, i.e., before stoning. Aphides are troublesome this season on Plums and Damsons, and trees require frequent syringings with Quassia water or Abol, which should be afforded towards 5 P.M., and the trees have a thorough washing with clean water applied by the syringe or garden-engine the next morning.

Sweet Cherries.—Trees on walls facing S., W. or S.W., will soon be ripening their fruit, and if aphides are noticed on the young shoots apply Quassia or Abol. In the case of the black variety the shoots should be dipped in the solution. Nail-in the shoots left for the extension of the tree, and protect the fruit with nets from the birds. The trees should not be allowed to suffer for the want of water at the root before or after the fruits are cleared, neither should the washing of the trees be neglected during the summer, as the Cherry soon falls a prey to red spider, but up to the present the trees here are keeping clear of this pest.

THE ORCHID HOUSES.

By W. P. BOUND, Gardener to J. COLMAN, Esq., Gatton Park, Reigate.

Diaxium bicornutum.—The flowering season of this beautiful species, sometimes named *Epidendrum bicornutum*, being now at an end, growth has become active; and any plant requiring a new pan, pot, or basket, should receive attention. A mixture consisting of equal parts of turfy-peat and chopped sphagnum, with Fera-rhizomes for drainage, will suit the plant, which is a moisture-loving subject. Old plants possessing many pseudo-bulbs and growths should have some of the leads removed with one or two pseudo-bulbs attached, which will help to increase the stock of the plant. This removal will allow of stronger development, and the flowers will be improved in size. When the leads are removed, the old plant not being further disturbed, will push forth new growths from the back portion, which may be treated in the same manner another season if thought desirable. The most suitable place for the plants is the warmest and shadiest part of the stove Orchid house. During the season of active growth, apply water copiously at the root, and often syringe the plants overhead in sunny weather. When the growth is completed, water should be applied less freely, but at no season should the materials become very dry, providing the temperature of the stove is maintained. Although the species is considered a difficult one to cultivate for any great length of time, still if its requirements are understood, and propagation is carried out when the plant is in good health, difficulties will usually disappear.

Bulbophyllum barbigerum.—Plants of this species are starting into growth, and if no repotting be required it will simply be enough to pick away some of the material to allow of the insertion of some fresh compost for the new roots to run amongst; a compost consisting of peat-fibre two-thirds, and chopped sphagnum one-third, is a very suitable one. Should repotting be necessary, let very shallow pans be employed, the greater number of the roots being found on the surface. Let the plants hang in a shady corner in the stove Orchid-house whilst growing, and apply water freely, also overhead spraying in bright weather. The plant may be increased in number by severing the rhizomes behind the second pseudo-bulb and potting them, not disturbing the hindmost portion of the plant, which will soon make a strong leading growth.

Dendrobium Phalaenopsis Schroderianum.—This autumn-flowering species is, at Gatton Park, more backward in growth than is usual at this date owing to abnormally cool weather, and repotting will have to be deferred to a much later part of the season. The best time for this operation will be when the new growth has reached a height of about 4 ins., a time when root activity will have begun. A suitable compost will consist of equal parts of turfy peat and chopped sphagnum, and a fair amount of drainage should be afforded, especially to plants in pots. The plant when making growth, requires abundant heat and moisture, and it is benefited by being placed in the Codium (Croton) house, and shaded from direct strong sunshine.

FRUITS UNDER GLASS.

By JAMES WHYTECK, Gardener to the DUKE OF Buccleuch, Dalkeith, Scotland.

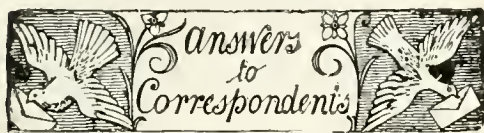
The Earliest Forced Vines.—The backward season has required the use of much more fire-heat than usual in the early vinery, and as a result red-spider manifested its presence as soon as the Grapes were ripe. The leaves when the fruit is consumed should be washed with the garden-engine, some nicotine insecticide being mixed with the water, and afterwards afforded repeated syringings with clear water. If the border on examination is found to be even moderately dry, apply water freely, also diluted manure-water from the cowshed; or sprinkle the border with some special Vine-manure, and afford water directly afterwards. Keep air on constantly in dull weather, and in the cold parts of the country it will be advisable to use the heating apparatus till the wood is thoroughly matured.

Vineries in which the Grapes are changing colour and ripening, should have air in small amount constantly, and chiefly at the top of the vinery, artificial heat being afforded in order to maintain the temperature at night at 60° and 10° to 15° higher by day for Hamburgs. The atmosphere should be much drier than heretofore, but the paths may be damped once or twice on bright days. If the inside border should require water, apply it in a clear state. Keep the lateral growths well shortened-in, and thus give the main foliage space in which to develop to its fullest size.

Muscad Vines.—Those started at the beginning of the year will now have Grapes in a nearly ripe state, and the temperature at night should be kept at 65° to 70° with some amount of air admitted constantly. Keep the house dry, afford no water to the border, as sufficient should have been applied before the ripening began. If the foliage be infested with insects sponge it with a mild insecticide, as that of the Muscad of Alexandria is easily injured; and as soon as the Grapes are removed, thoroughly wash the foliage with soapy water applied by the garden-engine, repeating this frequently; and at the same time if the border needs moisture, afford manure-water copiously.

Early-forced Planted-out Figs.—The first crop of fruit being consumed, the second will be following fast, and the trees may be syringed twice a day in bright weather. If the roots are as they should be, that is

restricted to a small border, surface dressings of artificial manure and plenty of water and weak manure-water may be applied. The shoots should be stopped at the fifth leaf, and all barren shoots removed. Maintain a moisture-laden atmosphere, and a temperature at night of 60°, and by day of 10° higher. Ripening Figs should be afforded a drier atmosphere and more ventilation; but the foliage of the Fig being so susceptible to attack by red-spider, aridity of the air must be avoided. Figs in pots want continuous attention as regards the application of water and manure.



ALPINE PLANTS: J. W. M. There are so many books, and you give no indication of the price you wish to pay. A book published by Mr. W. A. Clark will perhaps suit you; it is published by L. Upcott Gill, 170, Strand; the cost we do not know, but it is not likely to be great. We do not know the cost of the other book you mention. Prices should be advertised.

BLIGHTED LARCH: H. J. E. I can find no trace of fungi in the Larch-twigs or leaves, nor can I suggest any cause for the blighting. M. C. C.

CARNATION: C. A. B. The plant is probably affected by a fungus, *Helminthosporium ciliolatum*, which is in its early stage. The disease was fully described in the *Gardeners' Chronicle* for August 21, 1886. All diseased plants must be removed and burnt. There is no known remedy.

CARNATION, JANIE PIPER: H. E. A very attractive flower, of clear rose colour. It has evidently a non-bursting calyx and long flower stems. A good tree variety.

DISEASED MELONS: X. The fruits sent are badly diseased, but upon them I have hitherto found no trace of the Black Mould (*Cercospora melonis*). There is externally a profuse crop of "Anthracnose" (*Glaeosporium lagenarium*) mixed with the fusiform, triseptate conidia of *Fusarium reticulatum*, which is usually the companion of the "anthracnose." Neither in this instance, nor in others which have come under our notice of British growth, do the dimensions of the conidia in either direction attain those quoted by Saccardo. The spots on the leaves, although they somewhat resemble those of the *Cercospora*, belong also to the *Glaeosporium*, the conidia of which are profuse everywhere; but we could find no trace of the *Cercospora*. On some of the leaves, portions of which appear to have been long dead, saprophytes had begun to establish themselves, as, for instance, a *Macrosporium* resembling *M. sarcinula*, and a small *Cladosporium*; but neither of these have any connection with the disease. We can give no hope of saving plants when once attacked. M. C. C.

DISEASED PALMS: Strix. A great deal in the appearance of the specimen of *Kentia* sent for examination reminds one of the examples which have been sent two or three times to

the Scientific Committee for examination, and which passed through several hands of experts in entomology and mycology without eliciting satisfactory results. The roots in the present case do not present any features which are abnormal, and no evidence of disease. The lower parts of the petioles which form the sheath are dying, or dead; at the margins and upon this portion, as well as the contiguous green petiole, are sprinkled numerous small brown specks, which become darker on the dead margins. Externally they certainly resemble certain forms of fungi, but under the microscope, they are found to be quite different, and to consist of tufts of brown, twisted, distorted, and elongated

nucleate. This, however, is not a parasite, and cannot have anything to do with the mischief, except as a saprophyte developed upon the already dead tissues. M. C. C.

GRAPES: W. M. Your Grapes are affected with spot (*Glaeosporium*). Cut the berries away and burn them. Next year spray with liver of sulphur, ½ oz. to a gallon of water.

HIPPEASTRIUM OR AMARYLLIS SEEDLING: S. K. A pretty flower, but possessing no particular commercial value.

LOSING TIME: G. G. The gardener may think that he is empowered to stop the man's money and send him back for a quarter or half-a-day, but it is a strong proceeding on his part, and one that few private employers would countenance. A journeyman living in a bothy is scarcely on the same footing as regards conditions of service with an outside labourer.

NAMES OF PLANTS: A. G. 1, *Carex pendula*; 2, *Allium ursinum*; 3, *Dactylis glomerata variegata*; 4, a grass not recognised; 5, *Lathraea squamaria*; 6, *Dentaria bulbifera*.—F. B. The smaller plant is *Carex pendula*. The larger one you must send when in flower.—W. E. *Astrantia major*.—E. E. B. We cannot undertake to name florist's flowers of any kind.

PEAR LEAVES: W. H. Your leaves are attacked with the Pear mite (*Eriophyes pyri*). We are afraid you can do nothing but burn the affected leaves as far as you can.

PEACH-LEAVES DISEASED: Subscriber. W. R. The leaves are suffering from the infestation of a fungus, *Exoascus deformans*. Remove all affected leaves, and consign them to the garden furnace forthwith. Apply flowers-of-sulphur when the leaves are wet with dew.

PEAR-GRUB: Dublin. The Pears are attacked by the grub of the Codlin-moth, *Carpocapsa pomonella* (fig. 158), so common in Apples. Spray with Paris-green POISON, 1 lb. to 150 gallons of water, applied just after the fruit has set.

PEAS: E. M. W. Syringe the plants with liver-of-sulphur, one half ounce to a gallon of water. If this be applied and there is a change of weather shortly, the young plants may get the better of the mould.

RUSKIN: J. W. M. In numerous works Ruskin alludes incidentally to the botany and geology of the Alps, but his notices on these subjects are more rhapsodical than practical.

THE YORK GALA.—We are informed that the 1st prizes in the classes for six dishes of fruit, and four dishes of fruit, were awarded to Mr. J. C. McPherson, gr. to the Earl of Londesborough, Londesborough Park, Market Weighton.

COMMUNICATIONS RECEIVED.—O. B.—L. L. Clie, Rennes.—J. P.—A. H.—J. Carter & Co.—L. G. Wandsbeck.—F. B.—E. C. M. V.—A. W.—L. B., New York.—J. W. M.—S. W. F.—A. B., Madrid.—M. C. C.—C. van den B., Tirlmont.—G. M.—C. G. van T., Haarlem.—J. Poreher, Algiers.—E. B.—A. G.—C. A. B.—Strix, Jamaica.—R. Maher.—H. J. C.—R. G. J.—B.—J. D. G.—J. G.—T. H. Cook.—E. C.—Peter Barr, Cape Town.—E. M.—J. H. M., Sydney.—W. A. C.—T. T.—J. W.—E. H. J.—F. C. Lehmann.

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

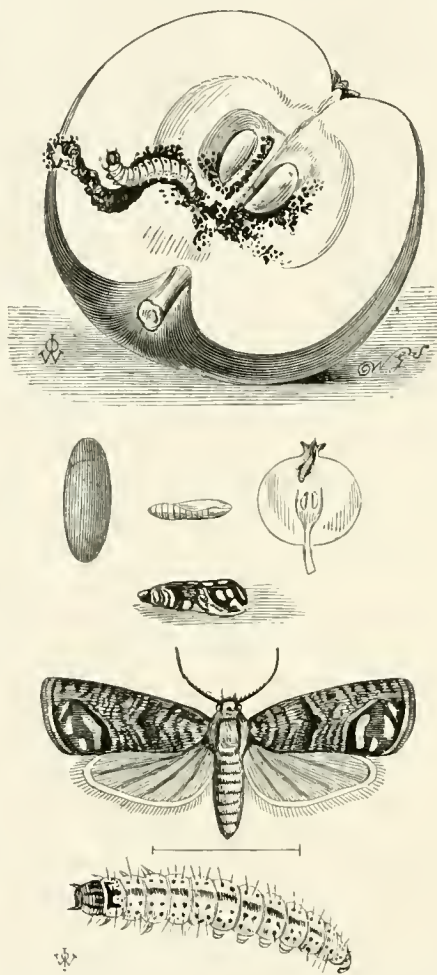
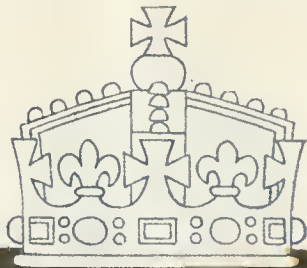


FIG. 158.—THE CODLIN MOTH (*CARPOCAPSA POMONELLA*). SHOWN IN VARIOUS STAGES OF ITS EXISTENCE: AND AN APPLE WITH A CATERPILLAR EMERGING.

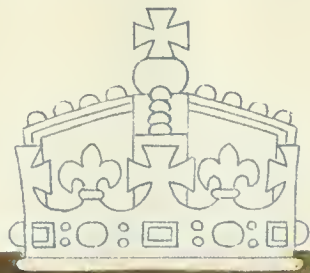
cells, very much like those which in former times were known by the name of *Erineum* and *Phyllerium*, but which are now recognised as the gall-like formations of species of *Phytopti*. I have seen no insects, but am not competent to decide whether these are the formations produced by some species of *Phytoptus* or not. The tips of the dead fronds are occupied by a minute *Phoma*, possibly undescribed, with sporules $8-10 \times 4-5\mu$, mostly



FIG. 159.—THE OLD FRUIT-RANGE AND HEAD GARDENER'S HOUSE, FROGMORE, WINDSOR.

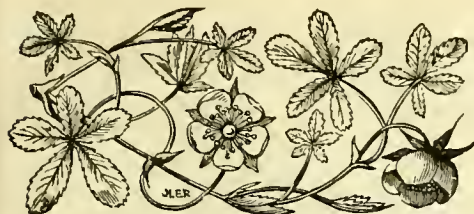


QUEEN ALEXANDRA



KING EDWARD VII

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THE

Gardeners' Chronicle

No. 809.—SATURDAY, JUNE 28, 1902.

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HOLLAND HOUSE.

WHEN we dig a little below the surface and examine those records of parishes, families, and houses which are, after all, the roots from which the fully-developed flowers of history spring, we find such a wealth of interest and even of romance that it is needless to call in the aid of fiction. Except that they were probably a small English clan, we know no more of the Kensingtons, who gave their name to the settlement of Kensington, and perhaps to that of Kensal, than we do of Queen Kenna, daughter of Oberon and beloved of Albion. This lady's imaginary father was not he who knew "a bank whereon the wild thyme blows," and she herself is probably as mythical as King Cole of Colchester or Belin of Billingsgate, King Lear of Leicester, *et hoc genus omne*.

Coming to a solid basis of fact, we find that at the time of the Domesday survey the Manor of Earl's Court was held by Aubrey de Vere, one of the companions of the Conqueror, under the Bishop of Coutances, William the Justiciar; and, in the time of Henry I., one Godfrey de Vere, bequeathed the church and part of the Manor of Kensington to the Abbey of Abingdon, in which way the parish church acquired its modern name of St. Mary Abbott's. At the close of the Wars of the Roses, John de Vere, thirteenth Earl of Oxford, whom Henry VII. fined heavily for too lavish a display of

liveried retainers on the occasion of a royal visit, finding himself obliged to retrench, sold the north part of Kensington, known as Knotting Barns, to Margaret, Countess of Richmond, the King's mother, and she bequeathed it to the Abbey of Westminster. Thus, at the dissolution of the monasteries, the whole manor fell into the hands of Henry VIII.,

of what we now know as Holland House, which was then named Cope's Castle. Only the centre and turrets were built in 1607, the original plan by the architect, John Thorpe, being among the treasures of the Soane Museum in Lincoln's Inn Fields.

When the Royal Horticultural Society obtained Lord Ilchester's permission to hold the Coronation Rose Show in the grounds of



LORD ILCHESTER.

who in 1545 threw it into the great hunting ground which he was making to the west and north of the metropolis. Queen Elizabeth granted it to William Cecil, Lord Burleigh, and, after his death in 1598, his trustees sold it to Sir Walter Cope, who also acquired the manor of West Town, the manor-house of which stood a little to the west of the present Holland House. In 1610 Cope also purchased the manor of Earl's Court; but, three years before that, he had begun the erection

Holland House, neither of the high contracting parties probably thought of the association of the house from its earliest foundation with the Rose, an association well-nigh as intimate as that of the Rose with the Crown of England; yet such there is. Sir Walter Cope, in memory of services rendered to the Crown, was granted as armorial bearings a silver shield bearing three golden fleur-de-lis on a blue chevron between three red Roses with green stalks and leaves (fig. 163, p. 428),

a coat which still remains at Kensington Parish Church.

Cope died in 1614, leaving a daughter Isabel, who married Sir Henry Rich, the younger son of Robert Rich, 1st Earl of Warwick, by his wife Penelope, sister of the ill-fated Robert Devereux, Earl of Essex. Henry Rich seems to have been a brave soldier though a most untrustworthy subject. On his marriage James I. made him Baron Kensington, and, in 1624, Earl of Holland in Lincolnshire, whence the house acquired its present name. He added to his father-in-law's structure the wings and arcades, the latter ornamented with fleur-de-lis of Caen stone, in reference to the Cope arms, from the design, it is said, of Inigo Jones. The Earl made an impression on the heart of Henrietta Maria, "the Rose and Lily Queen," to whom the two Tradescants acted as gardeners, and he seems to have done his best to turn this impression to his own advancement, and to have been much chagrined when he failed to secure all he wished. After commanding the cavalry in 1639, he, perhaps out of dislike to Strafford, joined the Parliamentary party in 1641, rejoined the king in 1643, and fought in the first battle of Newbury, again changed sides and held meetings of the chiefs of the army at his house, and finally appeared in arms for the king at Kingstone in 1648, was taken prisoner, tried by the same court that condemned Charles, and beheaded in Palace Yard in March, 1649. The portrait of him by Vandyck, now belonging to the Duke of Buccleuch, is said to have been painted at Holland House about 1635.

Fairfax occupied the house for a time, and is said to have been visited there by Cromwell, who is said, for secrecy's sake, to have conferred with Ireton on the open lawn.

Robert, the son and successor of the first earl, became, by the death of a cousin in 1673, fifth Earl of Warwick, and was in turn succeeded by his son Edward as third Earl of Holland and sixth Earl of Warwick.

At this period Holland House was frequently let, and William Penn records how, when he occupied it, the steps were crowded with suitors anxious to enlist his interest at the court of James II. William III. inspected the house with a view to making it a royal residence; but preferred Nottingham House, and it is from his time that Kensington has deserved Leigh Hunt's name for it, "The Old Court Suburb."

For some years before 1716 there had resided at Sandy's End, Little Chelsea, now Stanley Bridge, in a house once the home of Nell Gwynne, one Mr. Joseph Addison, then a member of the Board of Trade, and till recently editor of the *Spectator*. He had ventured to aspire to the hand of Charlotte, the widow of the third Earl of Holland, sixth of Warwick. As Macaulay says, "Chelsea is now a district of London, and Holland House may be called a town residence. But in the days of Anne and George the First, milkmaids and sportsmen wandered between green hedges and over fields bright with daisies, from Kensington almost to the shore of the Thames. Addison and Lady Warwick were country neighbours." In 1716 they were married, and thus Holland House, "a house which can boast of a greater number of inmates distinguished in political and literary history than any other private dwelling in England,"

gained its most illustrious inhabitant; and here, three years later, to the room on the first floor, facing north, now the dining-room, the genial satirist summoned his stepson, the seventh Earl of Warwick, to "see in what peace a Christian can die."

On the death of that seventh earl his titles passed to a cousin, another Edward Rich, the last earl, who died in 1759, when the property passed to a cousin, William Edwardes, who in 1776 became Baron Kensington. Morice, who married Bishop Atterbury's daughter, and that yet stauncher Jacobite, William Shippen, "downright Shippen," the frank opponent of Walpole, were tenants of Holland House for a time; but in 1746 a lease of it was taken by Henry Fox, and about 1760 he bought it.

Henry Fox was the younger son of Sir Stephen Fox, a man of no exalted birth, who had faithfully served the children of Charles I. when in exile; and who somewhat curiously, received in 1658 a grant of arms, a golden fleur-de-lis in a blue canton, which recalls those of the house of Cope. Much excitement had been caused in society in 1744 by the elopement of Henry Fox with Lady Caroline Lennox, a daughter of the Duke of Richmond; and, when this "needy political adventurer," as Macaulay terms him, the willing tool of Newcastle and of Bute, occupied the lucrative post of Paymaster of the Forces, and found it convenient to remain in the Lower House, his wife was in 1762 created Baroness Holland. Fox, however, became Lord Holland in the following year, and it was for him the grounds were laid out, about 1769, by Charles Hamilton, of Pain's Hill, many of the Cedars and American Oaks being planted at that time. Then it was that the avenue known as Nightingale Lane, crossing the estate from south to north to the west of the house, perhaps the scene of the strange ghost story related by Aubrey, and afterwards the favourite haunt of Charles James Fox, was turfed to please his mother, the first Lady Holland of the new line. Lord Holland was a friend and correspondent of Peter Collinson's, to which cause, no doubt, the gardens were indebted for some Virginian novelties, and travelling in Spain in 1803 he met the botanist, Anthony Joseph Cavanilles, and from him obtained seeds of *Dahlia variabilis*, which, when previously introduced by Lord Bute in 1789, had failed. This garden would seem, therefore, to be the centre whence all the original stock of this species in England has been derived.

The death of the first Lord Holland in 1774, was followed within the year by that of his elder son Stephen, who left a son, only a year old, to the care of his brother, the great whig statesman, then rising to the head of the Opposition. Charles James Fox himself was neither born at Holland House, nor did he die there, though much of his life was spent there; and, as Macaulay says, before he was borne in 1806 to Westminster Abbey, "a third Fox had already become one of the most conspicuous politicians in the kingdom," so that "during more than a century there" was "never a time at which a Fox has not stood in a prominent station among public men."

It was during the life of the third Lord Holland that Holland House became the most famous of English salons. From Thurlow and Eldon to Lyndhurst and

Brougham, from Sir Philip Francis and Sheridan to Curran and Romilly, Talleyrand and Metternich, Madame de Staël and Washington Irving, Byron, Tom Moore, "Monk" Lewis and Hookham Frere, Jeffrey, Sydney Smith, Julius Hare and Macaulay, Davy and Rumford, Wollaston and Humboldt, all that was illustrious in letters, in science, in public life, assembled here. A few yards from the tents of the Rose Show the seated bronze figure of the third Lord Holland, designed by Mr. Watts, faces Kensington High Street, where, in 1760, the young George III. cast sheep's eyes at the coquettish Lady Sarah Lennox, as, dressed as a shepherdess, she happened to be making hay when the king rode by. It is unfortunate when a blunder is perpetuated in solid iron, and undoubtedly a "d" has replaced an "m" in the second line of the verse on the railing of the park, in which Lord Holland describes himself as—

"Nephew of Fox and friend of Grey,
Be this my [d]meed of fame:
That those who knew me best may say
He tarnished neither name."

The third Lord Holland died in 1840, and his son, the last of the direct line, in 1859; but subsequently the estate passed into the hands of the representative of the elder branch, the elder son of Sir Stephen Fox having become Earl of Ilchester. Here again there are interesting horticultural associations, for William Fox-Strangeways, fourth Earl of Ilchester, a distinguished diplomatist, the uncle of the present Earl of Ilchester, was recognised as a careful botanist by Lindley, who named after him the monotypic Pomaceous tree of the Eastern Himalayas *Stranvæsia*; by Bertolini, who proposed to make *Hyacinthus spicata* into a genus *Strangeweya*; and by Parlato, who named it *Foxia*. Foreign botanists not unfrequently apply to us for an explanation of these names.

Serving on the British Legation at Vienna in 1834, and acting as Minister at Berlin from 1840 to 1849, the Earl made good use of his opportunities for the study of the flora of Europe.

That the gardening traditions of the place are worthily maintained anyone can see for themselves to-day. Whilst all around streets and houses are swallowing up garden-ground, within the Holland House estate a converse process is going on: the utilitarian is yielding year by year to the beautiful. Whilst it was the last Lord Holland who converted stables into a ball-room and a stable-yard into a garden, within the last three or four years, Mr. Dixon, who links the old regime to the present, has had the construction of a charming Japanese garden, where a stream trickles from Cactus-covered rocks down to basins of bog-bean, crossed by stepping-stones or rustic Rose-covered bridges, and Lilies bloom in the turf protected by a hedge of Bamboos. Old Apple trees still terminate the box formalities of the Dutch garden where once all was orchard, and new bog-gardens and Rhododendron beds encroach annually on the wild shrubbery or meadow. The garden was fully described in our columns on April 29, 1899. Nor let it be forgotten that Holland House is not the only field in which the Earl and Countess of Ilchester indulge their horticultural taste.



FIG. 161.—HOLLAND HOUSE. (SEE P. 425.)

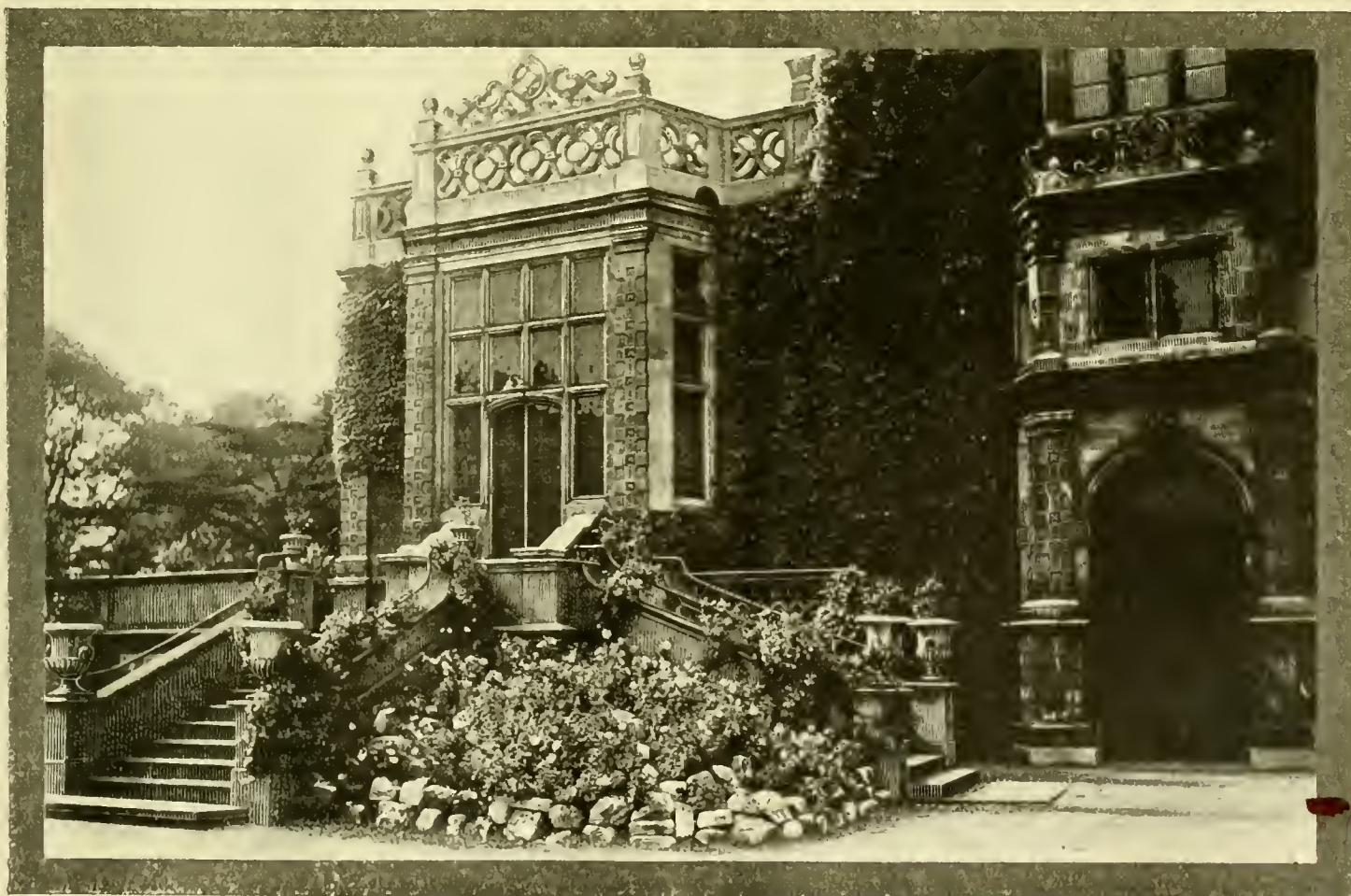


FIG. 162.—A CORNER OF HOLLAND HOUSE.

Their seat at Abbotsbury, in Dorsetshire, is famous for its collections of rare and interesting plants, of which the mildness of the climate renders the cultivation possible.

Long may the time be in coming, when, as Macaulay prophesied, "perhaps, a few old men, the last survivors of our generation, will in vain seek, amidst new streets, and squares, and railway-stations, for the site of that dwelling which was in their youth the favourite resort of wits and beauties, of painters and poets, of scholars, philosophers, and statesmen." *G. S. Boudger*. [The illustrations of the garden are from photographs obligingly put at our disposition by Mr. Dixon. Ed.]

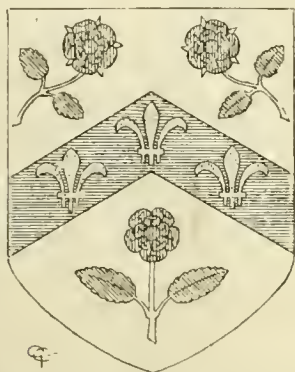


FIG. 163.—COAT OF ARMS OF SIR WALTER COPE.

Argent on a chevron azure, between three roses gules slipped and vert, as many fleurs-de-lys or.

ORCHID NOTES AND GLEANINGS.

CATTLEYAS AND LÆLIAS AT BARONSHALT.

ALL the Cattleyas and Lælias have flowered very finely with Henry Little, Esq., at Twickenham (gr., Mr. Howard) this year, and still there is a fine show, including several of the grand varieties which are seldom met with in any but such old collections as Mr. Little's. Among all the forms of Cattleya Mossiae now in flower, one purchased by him in 1886 stands out as the most beautiful in colour; so also his original plant of C. Warneri, which received an Award of Merit at the last Royal Horticultural Society's meeting, excels all the others more recently purchased, and which are now flowering. Lælia purpurata is good, one of the most distinct being L. p. Littleana; Cattleya aurea and C. × Hardyana are in fine vigour; the fine collection of forms of Lælio-Cattleya × elegans have still a few in bloom; and among the many Cypripediums are two or three new crosses, one between C. Curtisii and C. barbatum Warneri being a good and distinct flower.

THE BLUE CATTLEYA.

On several occasions the Orchid world has been startled by the announcement of a blue Cattleya, and a few years ago the story of its discovery and importation was circumstantially told, and the plants sold, but with disastrous results both to the vendor and purchasers, for the only blue discoverable was on the visages of the purchasers when the plants flowered common Cattleya Mossiae. But that there was a shade of excuse for the story appears by two or three of the importation flowering with Mr. H. A. Traey, of Twickenham, having a slate-blue colour on the lip, and a delicate lavender colour on the sepals and petals. The plants, although they might not

be called "blue Cattleyas," have a distinct and pretty tint. A very fine lot of typical Cattleya Mossiae, with richly coloured flowers; a fine white C. M. Wageneri, a pretty white, with purple blotch on the lip like C. M. Gilmourii; a good C. M. Reineckiana, and other fine varieties and hybrids are also in flower with Mr. Traey.

ODONTOGLOSSUM POLYXANTHUM GRANDIFLORUM.

Of all the showy Odontoglossums, perhaps the fine O. polyxanthum is the one we see the least of in flower, and to see such a noble spike of such a large and handsomely-marked variety as that sent by Thomas Roy, Esq., Craigelown, Perth, is therefore all the more pleasing. The spike has thirteen flowers, each just over 4 inches across the sepals. The sepals are nearly covered with purplish-brown blotches, the yellow ground colour only showing through in the centre, base, and apex. The petals are pale yellow, with a few purplish-brown markings at the base; the large, fringed, apiculate lip claret colour, with white callus and base. The plant must have been splendidly grown to produce such a spike. A fine Oncidium macranthum, two beautiful and very dark-coloured Lælia purpurata, and other excellent varieties also accompany it.

ROSES OF BRITISH ORIGIN, AND THEIR ORIGINATORS.

At the period when the oldest of our great British rosarians began their career as raisers, almost all the new Roses of any importance came to us from France, especially from those renowned centres of cultivation, viz., Paris and Lyons. Such names as Verdier, Laffay, Guillot, Margottin, and Ducher have long been associated in the minds of earnest British cultivators with some of the grandest varieties of the Rose that have ever appeared.

But with the advent of such men as Mr. WM. PAUL, the late Mr. HENRY BENNET, Mr. GEORGE PAUL of Cheshunt, and Mr. ALEXANDER DICKSON, JUN., of Newtownards, in Ireland, a new era of Rose-cultivation in Britain began. Such splendid creations as Duke of Edinburgh, Clio, Spenser, Medea, Mrs. Paul, Charles Gater, Duke of Teck, Clara Watson, Mrs. John Laing, Viscountess Folkestone, Margaret Dickson, Mrs. Sharman Crawford, Marchioness of Londonderry, and Lady Clanmorris, which have been raised by those great rosarians, rival the finest productions of France. It is true that they have given us no dark crimson variety transcending Charles Lefebvre or Horace Vernet, though in colour Duke of Edinburgh rivals either of these; they have, perhaps, eclipsed us in the peculiar brilliancy of their Hybrid Teas, though in size and substance and perfect formation they are for the most part inferior to our own; they have given us the most delicately beautiful and fascinating of all Roses for the conservatory, viz., the incomparable Maréchal Niel; but Medea is a more valuable variety (while hardly less impressive when seen at its best) for garden cultivation. On the other hand, Mme. Gabrielle Luizet is hardly on a level with Mrs. Sharman Crawford or Mrs. John Laing; their only French rival being the fragrant La France.

I am strongly disposed to think that Medea, a comparatively recent introduction, is likely to remain the grandest creation of Mr. WM. PAUL. This is undoubtedly the most commanding of all lemon-coloured

Teas, and as such, an acquisition of the greatest importance. Under favourable conditions of soil and climate, this is a superbly beautiful Rose. Other varieties of great attractiveness which we owe to Mr. PAUL are the graceful Enchantress, an exquisite hybrid between the Chinas and the Teas, and therefore the beginning of a very distinctive class; Empress Alexandra of Russia, unique in its colouring; Corinna, Queen Mab, and Duke of York, interesting additions to the China Roses; and Alexandra, a Tea Rose of somewhat dwarf habit (at least in my own garden), which had the honour of being named by his Majesty the King. Mr. PAUL has given us several Moss Roses of charming aspect, including Zenobia and the Little Gem; though these have hardly achieved the popularity of his more ambitious introductions, Mr. PAUL has been a frequent contributor to the highly important class of Hybrid Perpetuals. One of his earliest creations was Beauty of Waltham, which still retains its olden popularity, and was raised as far back as 1862. Magna Charta, to which as a serviceable free-flowering Rose for the garden, its raiser attaches considerable importance appeared in 1876. I do not admire it so much as Crown Prince, which, on its first appearance on the Continent, was greatly valued by the French rosarians. It is a very beautiful and most fragrant dark crimson Rose, and I have found it very enduring. Another extremely sweet hybrid perpetual is Marchioness of Lorne, which is so hardy that it can be grown in the most exacting situations. Pride of Waltham, which makes permanent the characteristics of Countess of Oxford, still remains a precious exhibition Rose. Spenser is an improvement, in form and fulness, on Baroness Rothschild; but Duchess of Albany, which is essentially a hybrid Tea, does not, unless, perhaps in vigour and floriferousness, eclipse La France.

The latest Tea Roses raised at Waltham Cross are Corallina and Boadicea, the latter of which has highly effective hues.

The grandly-endowed Roses raised by the Messrs. DICKSON, of Newtownards, in Ireland, have achieved great distinction. Supreme among these are Margaret Dickson, one of the most valuable of garden Roses, while it is also distinguished by its capability of immense growth and marvellous floriferousness; Marchioness of Londonderry, by no means so productive, but remarkable for the size and commanding aspect of its individual flowers; and Mrs. Sharman Crawford, one of the finest of pink hybrid perpetuals. Other notable Newtownards Roses are Lady Clanmorris, of recent production, a very beautiful creamy-white hybrid Tea; Ulster, Helen Keller, rosy-cerise in colour, with flowers of exquisite form and great substance; Earl and Marchioness of Dufferin, Lady Helen Stewart, and Mrs. W. J. Grant, known in America as Belle Siebicht, which I wish would grow more vigorously here; Meta and Beryl are decorative Roses of a fascinating description.

To Mr. GEORGE PAUL, of Cheshunt, we are indebted for many varieties of lustrous beauty, conspicuous among which are Charles Gater, whose colour is crimson, deeply shaded with maroon; Duke of Teck, a very bright derivative from Duke of Edin-



FIG. 164.—JAPANESE GARDEN, HOLLAND HOUSE.



FIG. 165.—BRIDGE IN JAPANESE GARDEN, HOLLAND HOUSE.

burgh; Mrs. Paul, one of the most imposing and attractively fragrant of the Bourbon Roses, derived from Madame Isaac Pereire; Rev. Alan Cheales, which has been expressively described as a "Peony-like Rose," of most distinctive hue. Nor should we fail to mention Cheshunt Hybrid, perhaps the first, and still one of the most precious of the Climbing Hybrid Teas, very rich in fragrance, and florally effusive. Among single Roses, Mr. George Paul's Carmine Pillar and Royal Scarlet, and his Rugosa, entitled atropurpurea, will always be regarded as very charming acquisitions.

The famous "Pedigree Roses" of the late Mr. HENRY BENNET will long keep fresh and green his honoured name; and especially such fine varieties as Viscountess Folkestone, an invaluable Rose, whether as regards its beauty or fragrance, for garden cultivation; Grace Darling, and Mrs. John Laing, which need no description; and those exquisite Tea Roses, arduous of adequate culture, yet worthy of all trouble—Princess Beatrice and Princess of Wales. Another dead rosarian of great eminence, LORD PENZANCE, merits the warm gratitude of all Rose cultivators, if only for the creation of those charming varieties, Amy Robsart, Lady Penzance, and Jeannie Deans; of which the hybrid Sweet Briar last mentioned should be grown side by side with Rosa Harrisoni, the loveliest of all Roses, if only for the sake of artistic effect.

From the late Mr. GEORGE PRINCE, of Oxford, whose memory as a rosarian we greatly revere, came that beautiful and free-flowering pure white variation from Souvenir d'un Ami, entitled Souvenir de S. A. Prince.

The most notable productions of Mr. JOHN CRANSTON of Hereford, who was a formidable exhibitor in his earlier days, have been the Crimson Bedder, a bright Rose, of rich fragrance; and Sir Garnet Wolesey. Mrs. Charles Turner, which perpetuates the name of the wife of a great cultivator (whose gifts were by no means confined to the region of horticulture, seeing that he was also, like his son Mr. HARRY TURNER, a highly endowed musician), originated at the Royal Nurseries, Slough.

Messrs. BENJAMIN R. CANT & SONS, of Colchester, have given us Prince Arthur, a velvety crimson Rose, derived from the venerable General Jacqueminet; also Mr. and Mrs. Ben Cant, which have been greatly admired, and have received high awards at the London exhibitions. From Messrs. FRANK CANT & Co., also of Colchester, have come Mrs. F. Cant, which reminds me instinctively of Madame Gabrielle Luizet; also what promises to prove a much finer introduction, viz., Lady Roberts, generally supposed to be a derivation from Anna Olivier.

Lawrence Allen and Purity are the leading productions of those rising rosarians, Messrs. COOLING, of Bath. Fair Helen, an almost white sport from Mrs. John Laing, was produced at the Stranraer nurseries of Messrs. THOMAS SMITH & SONS; while some valuable Roses, previously described by myself in this Journal, have been raised by the Messrs. COCKER, of Aberdeen. Chief among these are Mrs. James Cocker, the result of a cross between Mabel Morrison and Mrs. John Laing; they have also given us Duke and Duchess of Fife.

The Messrs. VEITCH of Chelsea, who have a great reputation as Orchid-originateurs, have recently distinguished themselves by the introduction of a new climbing Rose, entitled Queen Alexandra, which, having the characteristics of Turner's Crimson Rambler, but of considerably lighter colour, promises to prove an abiding acquisition.

British Rose-production seems almost to have reached its culmination in this Coronation year. David R. Williamson, *Maître of Kirkmaiden, Wigtownshire, Scotland.*

ALPINE GARDEN.

SOME HARDY PLANTS AT THE TEMPLE SHOW.

It is not improbable that in the almost overwhelming mass of material at the recent Temple Show, some rare plants would fall to get a notice in the report. Take for example *Ourisia coccinea*, a good plant, rarely observed in fine flower. The plant does not always flower till the rhizomes reach the side of the pot in which it is grown. If planted on the rockery, some care should be taken to bring the rhizomes into proximity with the rocky substances, where it will enjoy the moisture deposited thereon. The roots are freely formed on rhizomes, growing in such positions; and in the case of a large established plant in a pot, with the growth spreading over the side of the pot, roots freely form, and when shaded only by the leaves, they cling close to the pot if conditions are favourable, and the plant grows and flowers freely. The plant is of so telling a colour that it is worthy of extra care in its cultivation.

ONOSMA PYRAMIDALIS.

Novel, and as yet very rare, it is doubtful, even should the plant prove hardy, whether it is destined to become a first-rate rock plant. The species is described as the scarlet *Onosma*, and with a large amount of truth, for the flowers are scarlet or crimson-scarlet, and the inflorescence is of a pyramidal form. The flowers are small, but as the available stock is limited and the plant small, one can hardly expect it to be at its best. Certainly any alpine plant with the habit of *O. taurica* having scarlet flowers would be a great gain, and *O. pyramidalis* accomplishes this much, the species will not lack admirers. It may be treated as other kinds.

RAMONDIA PYRENAICA ALBA

was a striking plant among alpinists in the exhibit of Messrs. Jackman and Son, Woking. It has all the freedom to flower of the type, and is a welcome addition to the list of good rock plants, suitable for filling a cool shady nook on the rockery. When grown in a pot, a peat-and-leaf soil form the best mixture for it.

BLETIA HYACINTHINA.

A beautiful Chinese terrestrial Orchid, known to British gardeners for a century, but which still remains a rare plant. The deep purple colouring as seen in *Bletia*, is not too abundant among plants. There is proof of its being hardy in this country, but to make quite sure, the crowns should be protected in the winter. A finely flowered example, with two or three racemes of flowers, was noted in Messrs. Jackman's group. In the open the plant should be associated with *Dentaria*, *Corydalis nobilis*, &c.

GENTIANA VERNALIS.

The brilliant mass of flowers of this choice alpine as seen bordering the front of Messrs. Barr's fine group, made quite a feature. I

have rarely seen a finer lot of such blue flowers at any exhibition. There must have been several hundred of expanded flowers.

ARENARIA PURPURASCENS.

Is almost fully described by its name. It is certainly a neat and pretty plant, with its numerous purplish blossoms in a genus where nearly all are white-flowered. The blossoms are placed amid dense tufts of leaves, and only rise about an inch.

ACHILLEA RUPESTRIS.

Much objection is taken to the *Achilleas*, so largely having silver leafage and white flowers, but here is a species having pure white flowers, and unlike many others, quite entire spatulate leaves. It is an ideal rock plant of easy culture, and was repeatedly seen in collections on this occasion.

THALICTRUM ORIENTALE, &c.

The gracefulness of this plant, with its pure plume-like inflorescence and elegant foliage, is admitted by all plant-lovers; and perhaps just as good some may consider the ever-admired *Aquilegia Stuartii*, which is dwarf in habit, and has finely-coloured flowers, that may be described as bold, if not handsome—it is certainly a charming variety of *Columbine*.

A good word should be said for *Townsendia grandiflora*, a white *Gazania*-like plant; the beautiful *Enothera speciosa rosea*, choice in regard to colour and gracefulness.

In *Dracocephalum nutans alpinum* we have a desirable hardy plant of about 1 foot in height, densely furnished with spikes of flowers of a deep blue colour. The plant is distinct from the other members of this group, and is one of the best of its class. This was noted in Mr. Perry's fine exhibit, as was *Achillea buglossis*, *Codonopsis viridiflora*, and *Anchusa angustifolia*, with deep *Gentian*-blue flowers—an invaluable plant at this season.

The hardy *Cypripediums* alone formed a pleasing feature of the exhibition, and, arranged in mossy beds in colonies, gave just that touch of Nature that one always admires—a sort of free sprinkling of plants nicely arranged, and in which the Messrs. Wallace's collection, for example, exhibited the beauty of the plants without that unseemly mass and density of colour that confuses the eye and the mind. We are grateful for the lesson conveyed in this modest group of Orchids. Nearly all the catalogued species of these plants were noted, some being extremely fine. E. Jenkins.

VEGETABLES.

SPINACH.

NOTWITHSTANDING your bracketed editorial "No," I think you will have to accept *Chenopodium Bonus Henricus* (Good King Henry) as being the certain once-popular Spinach a correspondent is making an enquiry about. [Again, No; the plant was *Rumex Hydrolapathum*. We are quite familiar with good King Henry! Ed.] Yesterday I met with a Lincolnshire man who lives near here, and has a large bed of this plant, and he has promised to send me a dish, and also roots enough to plant a bed in my garden. My friend describes it as a most wholesome vegetable—not "windy," like Cabbage. Lincolnshire people know it as Mercury. Although in Lincoln "Good King Henry" may probably be in cultivation more as a pot-herb than in any other county, but the plant is by no means confined to Lincolnshire; we have it wild in this neighbourhood, where it is known as wild Spinach and Allgood. Hooker and Bentham give Good King Henry a very wide geographical distribution from

Caithness southward, also throughout Europe and Central Russia.

C. foetidum, or Stinking Goosefoot of Thornton, is an annual, and a different plant altogether, and is evidently the same as *C. vulvaria* of modern botanists. There is also a plant named *Mercurialis annua*, which has also a wide geographical distribution, the leaves of which are boiled and eaten as a pot-herb; probably this also may be a member of the lost family of *Spinacia oleracea*. W. Miller. [The ripe seeds of this plant, which resemble fine pearl barley, are largely employed in soups in Austria, where they are known colloquially as "gries" (groats, *Anglice*). ED.]

living plants, roots and all, for it endures all the summer, and does its large share in beautifying the God's Acre where the heroes rest. Cut flowers become ragged in a day, and unless removed almost as soon as they are placed, the well intentioned effort at decoration is in reality a desolation.

Early on Thursday morning, the 29th, the Memorial Day plant trade began in the city. The men who raise plants in pots, such as Pansies, Pelargoniums, Nasturtiums, have their homes chiefly across the north river in New Jersey. All along the stretch of high land that runs through Hudson County, from Weehawken, through West Hoboken, and Hoboken

closed. In the two or three hours that pass after the arrival of the first waggons, all is bustle, typical of a market anywhere. And such a jumble of tongues, dialects, and voices—not all men's voices either, for the women-folk are frequently active in growing and selling of these plants. One old woman over in Weehawken, indeed, is a most famous Pansy grower, and she knows, too, how to get the value for her plants. Until recently this trade was done in Union Square; the place afforded the necessary space, and out of the exigencies of the trade this regular market (through the growing season only, of course), sprang into existence. It is a very new thing, but out-



FIG. 166.—VIEW IN THE GARDENS, HOLLAND HOUSE. (SEE P. 425.)

UNITED STATES OF AMERICA.

THE PLANT TRADE ON MEMORIAL DAY IN NEW YORK.

MAY 30 in the United States is a day sacred to the solemn remembrance of those who have fallen on the battlefield in their country's cause. It is a national holiday, it should be a "holy-day," but it is not; generally the day is one of festivity. The spring has returned, and the occasion is fit for the work of planting out in the garden.

Year by year the quantity of plants and flowers consumed by New York in doing honour to the memory of its noble dead grows in volume. This is more especially noticeable in regard to living plants in pots. The custom of planting growing Pelargoniums and other popular flowers upon the graves is to a certain extent overpowering the mere use of cut blooms. There is considerably more satisfaction in using the

to Jersey City, and half way through that, too, there are small florists' establishments innumerable, where plants for the Decoration Day trade are literally manufactured. The owners of these places, mostly of foreign birth, German, Swiss, and French, with here and there a Scot, have worked day and night almost, propagating the plants till now, when comes the real harvest of the season. To these men a fine market morning the day before May 30 means a great deal. All night they were at work sorting and packing, and belated travellers by the ferries in the small hours of Thursday morning could have seen the string of waggons laden with flowers "all a-blowing and a-growing," wending their way to the neighbourhood of Clinton Market and Canal Street to offer their wares to the retail seller. From a few other near-by points on Long Island a few other growers also come, but the heart of the industry is in New Jersey.

Before daylight the market has practically

grew the square almost at once, and arrangements were made to use a part of Clinton Market.

New York is behindhand in its recognition of this trade, and as yet has not its plant and flower market, like London, Paris, or Washington even. So much for the plant trade.

Cut flowers are all marketed in the neighbourhood of Twenty-sixth to Thirtieth Streets and Sixth Avenue. Being more perishable, the hour is later, but 6 o'clock in the morning sees the Cut Flower Exchange in the Coogan Building, on the north-west corner of Twenty-sixth Street and Sixth Avenue, running in full swing. Hither come men and women from far and wide also, but the larger share of the supply has its origin on Long Island, and a motley aggregation it is. Lilies in great bunches of a hundred or so—the real Easter Lily, a bit behind the date; fluffy white Snowballs, Tulips of all sorts, the long, feathery petals of the Parrot Tulips, with their fan-

tastic fringe of green, gold, and red, mixing with the more ordinary-looking Tulips of pure colour, red or yellow; and smaller Carnations, in bunches of twenty-five or fifty; the starry *Deutzia*, the rich blue Cornflower, Sweet Sultans in several colours, white, pink, yellow; some early *Gladiolus*, *Spiræas*, strings of *Smilax*, indeed, anything and everything that is in flower is caught up and offered to the storekeepers who attend this market.

The Cut Flower Exchange is a market of small growers, many of whom do a local retail trade of their own, and they both buy and sell here, unloading the surplus of their special lines, and carrying home the produce of another. These men bring their little all in a bundle in their arms, or packed in a basket, and sell at a table. Very few of the flowers from here find their way to the large fashionable florists' stores on Broadway and Fifth Avenue. It is the outlying stores of the upper end of the city and Brooklyn, and the basement stands of the Greeks that use up this grade of goods.

By 7 o'clock there is a sudden lull in the trade done; a general exodus begins, and by an hour later the Exchange is deserted. Fully 30,000 dols. worth of cut flowers, such as have been named, was handled on the floor of the Exchange yesterday morning in the short space of about two hours. The Decoration Day market of 1902 had been favoured with good wreaths, and a record-breaking trade was the result.

But hardly does the busy hum of the Exchange begin to wane ere the New York Cut Flower Company, on the floor below in the same building, opens up for the disposal of what is the cream of New York's cut flower trade. This company is an association of the largest growers of high grade Rose and Carnations, and their shipments arrive by express. About eight o'clock the same hustle and bustle of the other market, just over, is repeated here, but with a different class of buyers. Here come the representatives of the big stores, and in a short time another 30,000 dols. worth of cut flowers is sold. The sale is continued in a more or less desultory fashion all through the day, but the bulk is done within a couple of hours after opening.

Some of the best and largest growers do not send their produce to the Cut Flower Co., however, and a walk of two or three blocks up into Twenty-eighth and the neighbouring streets will show a nest of wholesale commission florists who sell for out-of-town growers. What their trade may be cannot even be guessed, but it would not be less than that done on the floor of the Company, and it is conservative figuring to place the total value of the plant and flower trade in New York for to-day's event at 100,000 dols. At retail the money value would be doubled, and add to it the money expended for fine ornamental plants, Bay-trees, Palms, Ferns, &c., New Yorkers may be said to spend nearly one-third of a million dollars in honour of the nation's dead. V. V. V.

THE BOTANIC GARDEN, MARTINIQUE.—In a recent number of the *Revue Horticole* is a description by M. ANDRÉ, and an illustration of this beautiful garden, now overwhelmed by the volcanic catastrophe which has horrified the world. M. NOLLET, the director, and all his family, have perished. M. ANDRÉ, from personal observation, speaks of the garden as superior in richness and beauty to any other tropical garden, not even excepting Buitenzorg, Calcutta, or Peradeniya. Little was known of it in this country, but its loss is clearly a serious injury to civilisation.

The Week's Work.

THE HARDY FRUIT GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bictou, East Budleigh, Devonshire.

The Peach.—Notwithstanding the recent cold weather, the trees have made satisfactory growth here, and require frequent attention in the matter of securing the growing shoots to the wall, and in the stepping or entire removal of extra vigorous ones, according as the shoots are crowded or not, and in removing some of last season's shoots that have no fruit upon them. This will allow the new shoots a better chance of getting matured by the end of the summer. The fruits should now be finally thinned; and as rain has fallen in most localities during the past few weeks, and summer weather appears likely to come at last, a mulch of litter should be placed over the roots. The trees are keeping very free of aphids; mildew never troubles us here, but should it appear upon the trees apply flowers-of-sulphur after lightly syringing the tree, so that the sulphur may adhere for twenty-four hours, after which the trees should be given a good washing with water from the garden-engine. Examine the trees again in a few days, and repeat the dose if it be found that some of the spores are still alive. Mildew may result from two widely different sources: imperfect drainage or cold, sunless weather on the one hand, or dryness at the roots on the other.

The Strawberry.—In many gardens it is customary to propagate Strawberry plants annually, and plant them out on enriched ground, preferably a south border, where ripe fruits can be gathered several days in advance of the general crop. Though the crop be not so heavy, the individual fruits are generally very fine. For this purpose runners should be secured early in July, so that the plants can be set out early in the following month. Some prefer layering on square pieces of turf, but we always use 3 or 4-inch pots, filled with turfy loam. We fasten the runner in the centre with a small wooden peg, choosing the runner which is produced nearest to the parent plant, and removing the top close to the plantlet. Plants that were forced early, and were put out in the middle of May, will be nicely furnished with runners, though I should not permit each plant to furnish many, two or three being sufficient. A better practice is to use young plants put out in September, and grown especially for providing runners. All flower-spikes may be removed from these as soon as they can be handled. Keep the young plants well supplied with water during dry weather, and sever them from the mother-plant before they strike root into the soil.

THE KITCHEN GARDEN.

By T. TURTON, Gr. to J. K. D. WINGFIELD DIGBY, Esq. Sherborne Castle, Dorsetshire.

Asparagus.—Assuming that seed was sown for forming plantations or beds as recommended in a former Calendar, advantages should be taken of showery weather to thin the plants to not less than 15 inches apart in the rows, performing the operation with a single-handed fork. If there are blank spaces in the rows, make them good with some of the stronger thinnings, which will root readily at this season. The plants raised from seed produce useable heads the second year after sowing. The sowing made for furnishing plants for transplanting next spring—a method of which I do not approve—should also be thinned to 6 in. apart. At this date discontinue to cut any more heads from plants that will be forced next winter, and to cut at all after the middle of the month. Remove all weeds from the beds whilst they are small and easily drawn out by hand; and in showery weather, after the cutting has ceased, apply liquid-manure copiously, preferably that from the stables, or the drainings from hot-beds; and the next best thing is a dressing of nitrate of soda at about 2 oz. per square yard.

Onions.—Since warmer weather set in, spring-sown Onions have grown apace. Where bulbs of an even size are valued, a timely thinning of the crop should take place; and if the seed was sown thinly, as advised in a previous Calendar, great advantages in regard to the reduction of labour, and the growth of the plants, will be apparent, especially when thinning has to wait owing to lack of rain to soften the soil. A row or two on one side of the Onion-plot should be left unthinned, in order to afford plants for present use in salads, and sowings should be made throughout the season for this and other purposes. As soon as growth recommences after the thinning, and before the tops begin to get together, afford a light dressing of fresh soot, as a deterrent to the Onion-fly, and as an ammoniacal manure beneficial to Onions.

Turnips.—A large sowing may now be made of Snowball Turnip on a north border, or other cool spot, for furnishing roots late in the month of July and throughout August, a critical time for this vegetable. Thin succession crops, and if the Turnip-fly is troublesome, dust the plants regularly with air-slaked lime and soot when damp with dew.

Celery in the trenches is growing fast; also weeds, which should be hand-pulled before the plants become of a large size, and then with a 4-inch Dutch-hoe break up the surface and kill the small weeds. Keep the sides and tops of the ridges clear of weeds by hoeing.

Runner Beans.—A sowing made forthwith in a warm, sheltered part of the garden, will afford a gathering in the month of October. The pods from these late-sown Runner Beans will be of better quality than those from earlier sowings. I have sown as late as the first week in July, at the foot of a high south wall, which being outside the garden it was not expedient to plant with fruit-trees. Look over the earlier sowings, and tie up with raffia any leading growths that are not twining round the sticks naturally.

Ridge Cucumbers.—Ridges may still be formed by digging out a trench 4 feet wide and 15 inches deep, and filling it with warm stable-litter or weeds, lawn-mowings, tree-leaves, and spent hot-bed litter mixed together. Return most or all of the soil dug out of the trench over the heating materials, and put out the plants. If there are hand-lights available, place them over the plants till they begin to grow. When more space is wanted by the plants, elevate the hand-lights on pots or brickbats, or remove them altogether. Seeds of Vegetable-Marrows sown each end of the ridge may take the place of Cucumbers.

THE FLOWER GARDEN.

By R. DAVIDSON, Gardener to EARL CADOGAN, Culford Hall, Bury St. Edmunds.

Shrubs.—Strong, free-growing plants, such as the common Beech, Hornbeam, Privet, Whitethorn, &c., used as hedges, screens, and shelters in the garden, if kept in a formal style, should now be clipped, whilst the young growth is unripe, and easily cut with the shears.

Bulbs.—Daffodils which have been three or four years in the ground should be dug up as soon as the foliage has ripened, and the bulbs placed in their sizes in shallow boxes or on shelves in the sun, and later in the root-store, re-labelling the different varieties anew to prevent confusion at a future time. Some gardeners lift and replant immediately on fresh, well-prepared sites, planting the larger-sized bulbs by themselves for flowering next spring, in lines or clumps at regular distances apart, and at an even depth of about 4 inches, and the second and smaller-sized bulbs in patches in the reserve garden, or in the woodland for naturalisation; or the planting may be deferred till the autumn. Darwin and other late-flowering Tulips should be lifted as they ripen, and stored in the root-store till the autumn. Of course, the more satisfactory plan is to plant annually quantities of newly-imported

thoroughly matured bulbs, which can be purchased from any bulb-grower or nurseryman; but here we usually retain the best bulbs of those that are lifted, and plant them again in the autumn in the shrubbery borders, &c., where they produce fairly good flowers, although disease is much more prevalent amongst them than is the case with the newer bulbs.

General Remarks.—At the time of writing much rain has fallen, and is still falling abundantly, thus saving us the use of the water-pot on recently-planted bedding plants, but in many gardens planting operations will doubtless be impeded, if not altogether suspended, on account of the rain. Annuals sown in lines and patches will require thinning now, and it is important that this should be in accordance with the habit of each species, ample space being allowed in every case for full development. Keep a strict watch for slugs visiting the seed beds and patches, late and early, in search of these depredators. The young shoots of climbing and wall plants will require to be carefully tied neatly in position, and the flower-buds should be removed from such plants as *Stachys lanata*, *Centaurea ragusina*, &c., chiefly used for forming edgings. Look to the water-channels, traps, catch-pits, gratings, &c., of the walks in the flower-garden, putting everything in proper order for the conveyance of water from off the paths, otherwise much work will be entailed, especially in hilly gardens, in re-pairing washed-out gravel walks and clearing the turf of debris.

FRUITS UNDER GLASS.

By JAMES WHYLOCK, Gardener to the DUKE OF
BUCCLEUCH, Dalkeith, Scotland.

The Melonry.—The first crop of Melons being consumed, replace the old with fresh soil, the heaviest obtainable, mixing with it some quicklime and lime-rubble; and if it is light, add some bone-meal and an artificial fertiliser. A bed having a breadth of 18 ins. and a depth of 6 ins. will be of sufficient size. Plant out the Melon-plants at 2 feet apart; afford a small quantity of water, but let no water go within 6 inches of the stem. Train up each plant to a single stem, which stop when it reaches the trellis, and on the laterals produced thereby leave the fruit, e.g., four to a plant. When the fruits are developing freely, place an inch layer of soil and artificial or other manure on the bed; apply water carefully at the root, and lightly syringe the foliage on bright afternoons, closing the house or pit when the thermometer indicates 90°. Plants having ripening fruits should only be afforded as much water as will keep the leaves from flagging, and be afforded air constantly, but maintaining a mean temperature of 70°. The plants with growing fruits should have a moist, genial atmosphere, and the lateral growths should be shortened and thinned, and the plants trimmed regularly at short intervals of time. Seeds should now be sown—the last sowing for the season.

Peach-house.—The trees on which are ripening fruits should be afforded air night and day, and be kept cool, no fire-heat being needed, excepting on cold or rainy nights. The inside border should be covered with dry straw or bracken, in order to prevent evaporation of moisture; and scrim or hexagon netting should be fastened under the trees to catch falling fruits. When fruit is to be sent to a distance it should be picked before it is quite ripe. Trees with fruits stoning or swelling fast should be afforded a moist, but not stuffy atmosphere; a night temperature of 60° to 65° on bright days, and be syringed morning and afternoon, using occasionally an insecticide, largely diluted. Close the house with the thermometer at 80° to 90°, and at about 4 o'clock affording air in small quantities from 6 P.M., in order to reduce the warmth for the night to the mean. Thin out the shoots, leaving enough to provide next year's crop and no more. All gross shoots should be removed. Aged trees, in which the growth is weak

should be afforded Thomson's Vine Manure, or some other, followed by an application of water; or apply drainings from the cowshed well diluted. No manure should be applied to young vigorous trees.

The Latest Peach-house.—The fruits being thinned, excepting as regards a few left for the last thinning, all gross shoots, and any not required, should be removed, the rest being fastened to the trellis. If the fruits are not required till late in the autumn, let the house be well ventilated night and day, and the trees syringed at least once a day, and in hot weather twice, using occasionally a weak mixture of water and an insecticide, it being of importance that the foliage be kept clean. If the trees are established, and not growing too strongly, sprinkle the border with a fertiliser, and apply water afterwards—that is, if on examination it appears to require water; then let it be thorough, remembering that retentive soils require less water than those that are porous.

PLANTS UNDER GLASS.

By J. C. TALLACK, Gardener to E. MILLER MUNDY, Esq.,
Shipley Hall, Derby.

Calceolarias.—In order to obtain good plants of herbaceous Calceolarias for next year's flowering, sow the seeds forthwith in specially well-prepared seed-pans. The drainage should be good, and covered with an inch layer of siftings of the soil, and this again covered to within threequarters of an inch of the rim with a rather finely sifted mixture of loam, sand, and leaf-mould, finishing it off level, gently pressing it, and affording water with a fine rose-can before sowing the seeds. Having sown the seeds evenly, sprinkle a very thin layer of sand over all, or omit it according to fancy. Place the seed-pan in a hand-light on the north side of a wall, or in other cool position, taking care to elevate it on something that will prevent the depredations of slugs.

Streptocarpus.—Seedlings of the spring sowing should be potted, and grown on quickly, some of the largest being put into 5-inch, but the majority will do best in 3½-inch pots, in which they may be induced to throw up autumn spikes of flowers, which will show whether they are or are not worth keeping for a longer time. Loam one-half, and a quarter each of finely powdered cow-dung and leaf-mould, with plenty of sand, form a good compost for these plants, on no account omitting the cow-dung if it be possible to obtain it, as it acts like a charm on the plants, and lengthens their season of flowering. A well-shaded pit having an intermediate temperature, with permanent shading, affords the best conditions.

Hippeastrums.—When growth is complete, afford no more manure-water, and lessen the quantity of water afforded the plants until complete rest is attained, without which the bulb-mite is apt to infest the bulbs.

Camellias and Heaths.—The former may be stood out-doors in a partially shaded spot for the summer months; and syringe the tops copiously on the evenings of days that have been bright. In smoky places the plants are the better for being under glass the entire year if the structure is a suitable one. Cape and New Holland plants may be plunged in fine coal ashes in a sunny spot, where they may finish up their growth; plunging being necessary as a protection of the hair-like roots against injury by hot sunshine. Afford the plants plenty of room, and apply the syringe frequently.

Allamandas.—These and many other strong growing climbers should be afforded liquid-manure, so as to impart size and substance to the flowers. Of course, only plants in well drained pots and borders can be afforded this high sort of culture. Plants which show signs of the soil being in a stagnant state should be afforded clear water only, and this very carefully.

Seedlings.—Many young seedling plants, such as *Celosias*, *Vincas*, *Asclepias curassavica*, a very ornamental plant seldom seen nowadays, will require repotting; and during the next week or two, the potting-bench will be pretty constantly in requisition.

THE ORCHID HOUSES.

By W. P. BOUND, Gardener to J. COLMAN, Esq., Gatton
Park, Reigate.

Thunias.—The flowers having passed, remove the plants from the house in which they have been grown to one where they will obtain more sunlight and air, and later they may be removed again to a Peach-house, or similar structure, where there will be full sunshine and abundance of air to harden and mature the newly-made pseudo-bulbs. Continue to afford the plants water until the foliage shows signs of ripening, then reduce the supply gradually. At the end of September remove the plants to a dry, airy house, where the temperature in winter does not fall below 45°, where they remain till the season arrives for restarting them into growth.

Calogyne Dayana now starting into growth may be repotted or resurfaced at once, if this be necessary. Use a compost of equal parts of fibrous peat, fibrous loam, leaf-soil, and chopped sphagnum-moss. The plants should be grown in pans and suspended, thus will the flower-spikes be shown to the best advantage. Efficient drainage is needed, for the plants require copious supplies of water when making vigorous growth. In the process of repotting some of the old hack pseudo-bulbs should be removed from plants that have many bulbs and few leads. Pot firmly, and keep the compost on a level with the rim of the pan. On the surface of the compost insert a few heads of living sphagnum-moss; these will help to retain the needful moisture. Plants that do not require new receptacles should have some of the old surface material removed, and be resurfaced with the compost recommended for use in potting. They should be suspended at the warmest end of the stove Orchid-house, and be carefully afforded water until the new roots have taken a firm hold of the compost. The plants delight in an abundance of atmospherical moisture, and should be sprayed overhead on bright days.

Atrides and Vandas.—Most of these are now making many roots. Afford them water freely, and frequently damp the spaces between the pots. Maintain the atmosphere of the house sweet by judicious ventilation.

Miltonia vexillarium should now be afforded a slight rest by withholding the copious supplies of water that have been afforded during the time the plants have been developing their growths and flowers. I do not advise keeping them so dry as to cause loss of foliage, or the shrivelling of the newly made pseudo-bulbs. If they were potted in the compost advised in a previous Calendar, very little water will suffice to keep them in a firm state until the new growth is sufficiently advanced for the plants to be repotted.

PUBLICATIONS RECEIVED.—*The Natural History of Plants*, Kerner and Oliver. Part II.—From the County of Essex Technical Instruction Committee, Biology Section. Holiday Courses for Teachers. Field Studies in Natural History.—*Programme of Summer Rambles*, 1902, by E. C. Horrell, F.L.S., and F. J. Chittenden. Details the proposed series of Saturday afternoon demonstrations on field-botany and other branches of Nature-study to be taken during the season.—*Clouds and Weather Signs*, by Commander D. Wilson Barker, R.N.R., illustrated with a series of cloud photographs by the author (reprinted from *Knowledge*, 326, High Holborn, W.C.). Attractive and suggestive. "Whoever wishes to be weather-wise and who has time to study the weather charts published daily, may easily acquire such knowledge of local characteristics as will enable him to forecast fairly accurately; cirrus clouds as a rule—at any rate in England—are reliable guides." Space forbids quotations of the details to be observed, for which reference should be made to the pamphlet.—From the Department of Agriculture, Tasmania, Bulletin No. 6. *Insect and Fungus Pests of the Field, Farm, and Garden*, by Edward H. Thompson, edited by F. W. J. Moore. With much information and many illustrations this should prove a useful publication.

APPOINTMENTS FOR THE ENSUING WEEK.

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| TUESDAY, JULY 1 | Royal Horticultural Society of Southampton, Exhibition (2 days). |
| WEDNESDAY, JULY 2 | National Rose Society's Exhibition in Temple Gardens, Thames Embankment. Hanley (Staffs) Horticultural Fête (2 days). Richmond (Surrey) Horticultural Show. |
| THURSDAY, JULY 3 | Colchester Rose and Horticultural Society, Exhibition. Sidcup Rose Show. Norwich Rose Show. |

SALE FOR THE WEEK.

FRIDAY, JULY 4—
Orchids in variety, by order of Messrs. Stanley, Ashton, and others, 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—62.8.

ACTUAL TEMPERATURES:—
LONDON.—June 23 (6 P.M.): Max. 74°; Min. 58°.
PROVINCES.—June 23 (6 P.M.): 73°, S. Counties; Min. 59°, N.-E. Scotland.

** As these lines are passing through the Press, the alarming news reaches us that His Majesty's condition is such that an operation has been performed, and that the Coronation ceremonial must accordingly be postponed. It is impossible to realise the concern of his loyal subjects, or to estimate the amount of derangement that must ensue, now that the preparations have been all but completed. We can only wish for the best, and trust that a happy issue may result.

The show at Holland House, which is taking place as we write these lines, is a very successful one. It is a Temple Show improved. The locality is admirably suited for the purpose; the weather is fine, the show in most departments excellent. Looked at from a rosarian's point of view, it is as might have been expected from the late season, somewhat of a failure, for the exhibition Roses are few and far between, and not of first-rate quality. But even from the rosarian's point of view, there is much to attract. The so-called garden Roses are shown in some abundance, and they partly compensate for the comparative absence of the exhibition varieties. Mr. TURNER's group of hybrids of Wichuriana is novel and most interesting—decidedly one of the most important features of the show. Messrs. PAUL & SON's group, containing some remarkable varieties of *Rosa rugosa*, is scarcely less remarkable; *Rosa sinica* "Anemone" in this group is noteworthy. Mr. SANDER's splendid collection of Orchids, Mr. MARTIN SMITH's Carnations, Messrs. DAVIS & SONS' Begonias, Messrs. SUTTONS' Gloxinias, shown in a large Wardian case; Messrs. WALLACE's Lilies, Messrs. REAMS-BOTTOM's Anemones—these are a few of the more remarkable exhibits, for a more detailed account of which, so far as time and space will permit, we must refer to another column. Suffice it to say that the show is one of the prettiest and most interesting that we have seen for a long while.

The large marquee set apart for the luncheon, and subsequently for the Rose Conference, was well filled with horticulturists, Committeemen and judges. After the collation was partaken of, Mr. GURNEY FOWLER, the Treasurer of the Society, who had taken the chair in the unavoidable absence of the President, proposed the usual loyal toast to

their MAJESTIES THE KING AND QUEEN, who he told his audience were Patrons of the Royal Horticultural Society. The toast was most cordially drunk with musical honours. The Chairman incidentally mentioned the fact that H.R.H. the Duchess of CONNAUGHT as having paid a visit to the show.

Allusion was made to the great interest the King and Queen took in gardens and gardening.

The Chairman then gave the toast of the Committees and the Judges, coupling it with the name of Mr. GEORGE PAUL. This gentleman in replying to the toast, said, that it was

The Hall and Garden were considered merely as adjuncts to the work of the Society, and the cost of providing them should be borne by the Fellows.

Dean HOLE opened the Rose Conference in his usual felicitous style. He likened the rose—the queen of flowers—to our Queen ALEXANDRA—the Rose of Denmark, for they are alike beautiful and alike beloved. He claimed for the flower under consideration that it had no rival for colour, form, and fragrance, and dwelt upon the manifold uses to which it could be put. Dean HOLE specially emphasized the opportunities of



THE VERY REVEREND S. R. HOLE, DEAN OF ROCHESTER.
President of the Rose Conference at Holland House.

to him a great honour to reply to the toast; the duties of the Committees were very arduous and those of the judges not less so; but he had no fear of the judges not doing their duty as they were chosen from among men who have won their spurs in some special field of gardening.

The speaker made mention of the readiness of the Council to listen to suggestions made by the Committees on all occasions, and spoke approvingly of the luncheon as being an appropriate function on this occasion.

The Chairman then proposed the toast—"Prosperity to the Society."

"Very few words would suffice. They were bent," he said, "on forwarding the interests of Gardening and Gardeners. This could be done by building a Hall and forming an experimental garden; and on the carrying out these projects they were dependent on the support afforded by the Fellows and their friends."

The Hall would be completed, he believed in time for the Centenary of the Society.

beautifying gardens with Roses, and alluded to his inaugurating forty-five years ago the first show dedicated to these blossoms alone. He then read the programme of the Conference, and called on Mr. BAKER, F.R.S., to give an account of two new Roses from the South-West United States. These, of which figures were exhibited, are *Rosa stellata*, from an altitude of five or six thousand feet in New Mexico, and has the characteristics of Scotch Roses, with unequal thorns, but has, unlike any other species, the three terminal leaflets arranged in the fashion of those of *Potentilla*. The second species, from California, also has features really of the Scotch forms, but gains its name (*Rosa minutifolia*) from its very small leaves.

The Rev. J. H. PEMBERTON, taking as his subject hybrid Teas, traced the history of these varieties and showed how they have increased in number and popularity. At this point the president announced that the rumour as to the illness of the King had unfortunately been confirmed, and proposed

a vote of condolence to the Queen, which was seconded by Dean Hole and carried.

Hybrid Teas were again treated by Mr. Alexander Dickson, who, dividing them into five classes, dwelt upon the chief varieties, their special features, and their introducers. — Mr. Edward Mawley read a paper on the "Sensitiveness of Cultivated Roses to Changes of Weather," saying that we are just as liable to lose our Roses through cold owing to the plants still being "half hardy." He also gave some hints as to their care in winter. "The Cultivation of Roses under Glass" was treated of by Mr. George Mount, who pointed out how his methods differed from those of other growers. For instance, he never syringes the plants after the leaves have appeared, nor does he stake them, and when they have done flowering he takes the greatest care of them.

CYPRIPEDIUM CALLOSUM VAR. SANDERÆ (Supplementary Illustration). — This is a Siamese species, and one of the finest, if not the finest, of the pale-flowered or albino forms. The dorsal sepal is described by Messrs. Sander as white, with apple-green radiating veins, pale green petals, white on the upper edges, and pale green lip. It was exhibited by Messrs. SANDER in May, 1894, and is first alluded to in our number for May 26 of that year, p. 663. Our illustration was prepared from material supplied by Capt. LAW-SCHOFIELD, of New Hall Hey, Rawtenstall, Manchester, in whose collection of Orchids it was grown.

NATIONAL ROSE SOCIETY.—The Dean of ROCHESTER will open the National Rose Society's Show at the Temple Gardens, at noon on July 2.

PARIS INTERNATIONAL HORTICULTURAL EXHIBITION.—The Société Nationale d'Horticulture de France proposes to organise an International Exhibition in Paris in the spring of the year 1905.

DRYMOPHLOEUS NORMANBYI.—Some time since Mr. F. M. BAILEY, the colonial botanist of Queensland, obligingly called our attention to an illustration from a photograph to which the name of *Ptychosperma elegans* was attached. The photograph came from the Buitenzorg Botanic Garden, but there seems to be no doubt that the Palm represented was really *Drymophloeus Normanbyi*, described in Mr. BAILEY'S *Queensland Flora*, part 5, p. 1678, just received.

"EL JARDIN."—This, the newest contribution to the horticultural press, was first issued from Madrid early in June. The preliminary number contains some original articles, and notes culled from various sources. The journal is published by Señor BACQUÉ, Paseo del Obelisco, 15, Madrid. We are pleased to welcome a new comer from a country that hitherto has been somewhat behind others in the number of its papers devoted to gardening and science generally.

VOLCANIC ASH IN BARBADOS.—A description of the volcanic eruptions at Martinique and St. Vincent has already been given in the newspapers. It may be worthy of note that the volcanic ash that fell at Barbados from 5 P.M. on the 7th to 4.30 A.M. on the 8th varied from $\frac{3}{4}$ to $\frac{1}{2}$ inch in depth. It covered houses, trees, and all vegetation with a grey mantle of impalpable powder, and gave the landscape a singular appearance. By actual measurement it has been ascertained that the weight of ash was at the rate of 17.58 tons per acre, or 11,251 tons per square mile. Taking the area of Barbados at 166 square miles, it is probable

that nearly 2,000,000 tons of ash were deposited over this island alone. An immense quantity must have also fallen into the sea. The composition of the ash has not yet been ascertained. It is probable, as in the case of the "May dust" of 1812, that it contains silica, alumina, oxide of iron, and oxide of manganese, with some trace of sulphur. It should be regarded in its ultimate results, at least, as beneficial to the soil. "*Agricultural News*," Barbados.

SEQUOIA GIGANTEA PENDULA.—In the fine collection of Conifers possessed by CHARLES WALKER, Esq., of Brettargh Holt, Kendal, writes Mr. W. J. IRELAND, is a specimen of this variety of *Sequoia* which is exactly 22 feet in height. Last year's growth was very good, and measured from 18 to 20 inches. It is said that this variety is rare in gardens, and it may be hoped that Mr. D. S. FISH's remarks in a recent issue of the *Gardeners' Chronicle*, will elicit some further information for regarded to other fine specimens.

ARBOR DAY FOR THE WEST INDIES.—It is suggested that Coronation Day, June 26, would be an appropriate one to adopt in the West Indies as an Arbor Day. It would commemorate a striking event in the history of the Empire, and besides, it would fall exactly at the right season for planting purposes. In many localities the planting of ornamental shade trees would be of great public benefit, and at the same time add to the comfort and amenities of life in the tropics. Suitable trees and Palms are always obtainable for the purpose at the Botanic Gardens, and it only requires the movement to be started, under favourable auspices, to be taken up with every hope of success. A few preliminary hints might be useful. The holes for the trees, about 3 feet square and about $2\frac{1}{2}$ feet deep, should be prepared some days beforehand, and filled with good soil. The actual planting requires care, but it is an operation that affords pleasure to many; preferably it should be undertaken in the afternoon, and the plant immediately watered. If the trees are planted in open spaces or along road-sides, where they are liable to be injured, they should be protected by tree-guards. If desired, permanent metal labels for Coronation-trees would be imported, and supplied at cost price by the Imperial Department of Agriculture. "*Agricultural News*," Barbados.

"BOTANICAL MAGAZINE."—The plants figured in the June number are:—

Aloe pendens, Forskahl, t. 7837.—A native of S. Arabia, which flowered in the gardens of Sir T. HANBURY, at La Mortola. It has tufts of recurved, channelled, narrow, lanceolate leaves, 17 to 18 inches long, spiny at the margins, and erect panicles of numerous cylindrical pinkish flowers, each about 1 inch long.

Euryops socotranus, Balfour fil., t. 7838.—A yellow-flowered Composite, with pinnatifid bright green leaves, the segments linear. It is a native of Socotra, and flowered in the Botanic Gardens, Edinburgh.

Eranthemum atropurpureum, Hort. Bull. (t. 7839).—Native of the Solomon Islands.

Echinocactus microsperrmus, Weber, t. 7840.—A native of Argentina. A species with sub-globose stem, studded with tubercles, each bearing a tuft of 10 to 14 spines of unequal size, one much longer than the others, and hooked at the extremity; flowers yellow, about 2 inches in diameter.

Plectranthus saccatus, Bentham, t. 7841.—A native of Natal, with blue flowers, nearly $1\frac{1}{2}$ inch long.

GENEROUS OFFER BY A BELFAST NURSERY-MAN.—Mr. HUGH DICKSON, of the Royal Nurseries, Belfast, who has recently been appointed nurseryman to the KING, has, with loyalty and generosity that are alike praiseworthy, announced that in commemoration of the Coronation he proposes to give a choice ornamental tree gratis, on application, for planting in the grounds of every charitable institution in Ulster, delivered free. This generous offer holds good until Wednesday of next week, and is, as we learn, being largely taken advantage of.

A PRACTICAL METHOD OF COMMEMORATING THE CORONATION.—We do not know of a more practical way of commemorating the Coronation of the King and Queen, nor one more in touch with the well-known sentiments so often expressed by their Majesties, than that adopted by the Committee of the Gardeners' Royal Benevolent Institution. We understand that the committee of this old established charity, of which their Majesties the King and Queen are Patrons, have decided to commemorate the Coronation by placing on the pension list for June 26, the eleven unsuccessful candidates who had previously been subscribers to the Institution. The committee have also voted the sum of £5 to each of the unsuccessful candidates, thirteen in number, who had not previously been subscribers. We feel sure that the supporters of this most admirable charity will heartily endorse the committee's action, and not allow the Institution to suffer for lack of funds.

THOSE DREADFUL NAMES!—Mr. CREMER, at a recent sitting of the House of Commons, asked the "First Commissioner of Works whether, in order to increase the interest taken in horticulture, foreign shrubs, and trees, by the visitors to Kew Gardens and the public parks, he will issue instructions that the practice of labelling flowers, shrubs, and trees in Latin shall be discontinued, and English substituted; or if the present method is continued, that side by side with the Latin description the name shall appear in English; and whether he will see that the same rule is applied in our national museums [Monday, June 23]." The First Commissioner may issue instructions, but neither he nor his questioner can fully realise the impossibility of carrying them out. The genuine English names in common use number a few hundreds at the most; the Latin names may be counted by the hundred thousand. We do not think ADAM or SOLOMON would be equal to the task of coining English names for all this host, and we know from long experience that to those who really want to know something about the plants they see or cultivate, the nomenclature presents no serious difficulty; such as there is, is soon overcome by the student.

LANDSCAPE GARDENING IN CUBA.—We learn from the *Revue Horticole* that M. ED. ANDRÉ and his son, M. RENÉ ANDRÉ, have been commissioned to carry out some important works in Cuba, and that M. RENÉ ANDRÉ has recently visited not only that island, but also many of the principal cities of the United States, in order to study the vegetation and the arrangements of the parks and public gardens.

"HORTUS THENENSIS."—The second edition of the second part of the catalogue of the plants cultivated in the gardens of M. VAN DEN BOSSCHE, of Tirlemont, Belgium, has lately been issued. It contains all the Gamopetalae, Monochlamydeae, Monocotyledons, and Fergus. The total number of species cata-

logged amounts to 4073. Great care has been taken with the synonymy, and frequent references have been made to illustrations. The book is handsomely got up, and will be very serviceable to those who are interested in the botany of the plants they cultivate.

PRUMNOPITYS ELEGANS (SYN. PODOCARPUS ANDINA).—Mr. F. W. MOORE, of Glasnevin, kindly sends us male flowers of this species from county Wicklow. Up to this time the occurrence of male flowers has been rarely noted, though they are figured by Mr. KENT in the last edition of *Veitch's Manual of Conifers*. They are borne in close racemes on the ends of the branches; each is rather less than a centimetre in length and about 3 mill. in breadth, linear-oblong, obtuse, greenish-yellow. The overlapping anther-scales are convex, ovate-deltoid, acute, membranous, and slightly laciniate at the edges. The pollen-grains are winged, as in *Podocarpus*. On February 15 of the present year we published an illustration of a tree at Penjerriek as *Podocarpus andina*—the name written on the photograph. Now, *Podocarpus andina* is a synonym of *Prumnopitys elegans*; we were accordingly misled, so that whilst the article in the text at p. 113 refers to *Prumnopitys*, the plant whose male flowers furnish the subject of the present note, the supplementary illustration really represents *Podocarpus chilina* as shown by specimens subsequently received from Mr. FOX, and as pointed out by Sir W. T. THISELTON-DYER. Moral—Never trust the names attached to photographs without seeing a specimen of the plant they represent.

THE PROGRESS OF THE NATION.—It is refreshing to see the *Times* writing in the following strain. The sooner other leaders of opinion follow the same course the better. We have the experts, but the so-called practical man is sadly slow to avail himself of the resources put at his disposal. We must, indeed, obey the advice of the PRINCE OF WALES, and "wake up."

"This nation really has no chance in modern conditions unless official persons generally consent to recognise that there are a great many important subjects about which they know nothing, and which are in a state of such rapid change and development that no student, of the calibre which an official salary will attract, can possibly be and remain in a position to legislate about them. What we want is that the real practical and scientific intellect of the country should be called to the aid of the politicians and their official 'experts.' It is not by Boards of Trade, with their self-sufficiency, their timidity, and their necessary ignorance of the later phases of development, that other nations have adapted their legislation to the progress of science. It is by giving intellect that advisory place in the framing of legislation which it will never seek by the politician's method of appealing to the ballot-box. The electrical, chemical, physical, and biological questions, upon the solution of which so much modern progress and prosperity depend, deserve and demand the habitual consultation of the best men engaged in their study."

BULLETIN OF THE FRENCH HORTICULTURAL SOCIETY OF LONDON.—We have before us the *Bulletin* of the Société Française d'Horticulture de Londres for 1901, and are pleased to note every indication of continued prosperity. There is an obituary notice, with portrait, of THOMAS ROCHFORD; and notes on the culture of *Eucharis*, by Mr. ULRICH GUILLOU; of *Cyclamen*, by M. LÉOPOLD MOREAU; of *Cianthus*, by M. H. NAVEL; of *Nymphaea*, by M. GABRIEL LALAUURIE; and of other plants by other writers. An account is given of the conditions of admission (as a member of the gardening staff) to Kew by M. H. NAVEL; and notices (illustrated) of HERR J. C. SCHMIDT'S garden at Erfurt. Satisfactory reports of the various meetings of the Society complete the bulletin, which is procurable from 66, Long Acre, London, W.C., and 84, bis, Rue de Grenelle, Paris.

REPORT FROM READING COLLEGE.—The eighth annual report on field and other trials conducted under the auspices of the Reading College Agricultural Department, and the County Councils of Berks, Bucks, Dorset, Hampshire, and Oxfordshire, is now ready. During the past year (1901), the scope of the trials has been considerably extended. The effects of manures on hay and pasture in different districts and on different classes of soils have been fully dealt with in this and other reports, as well as the effects of manures throughout a rotation of crops. Trials have been made of seed mixtures for from one to three years' ley, and some striking results have been given by the inclusion of Lucerne and other plants in a mixture for a three years' ley. Trials on varieties of Barley for malting purposes should lead to results of great practical value to growers. Appended are sections giving precise information on the more important manures, and suggestions as to the manuring of various crops.

when forming a collection of stove or greenhouse plants include a considerable number of those plants which he knows will stand him in good stead in this kind of work, always bearing in mind that the plants that are the most useful and adaptable are those possessing elegance, gracefulness, and lightness. It goes without saying that plants used for this purpose, whether flowering or foliaged plants, as they are to be placed in conspicuous positions, should be handsome specimens, free from disease, deformity, or blemish.

SERVICEABLE PLANTS.

Before enumerating a few of the many suitable foliage-plants available for this work, I will make good an omission from my list of flowering plants in a recent issue, namely, *Begonia Gloire de Lorraine*, *Epiphyllum Gaertneri*, and *E. truncatum* in variety, these when well flowered as dwarfs or standards being most effective. Another valuable addition to this class of plant is the



FIG. 168.—PERGOLA IN THE KITCHEN-GARDEN, HOLLAND HOUSE. (SEE P. 425.)

THE ART OF TABLE DECORATION.

(Continued from p. 366.)

PLANTS THAT MAY NOT BE EMPLOYED.—In considering the subject of the most suitable species of plants for the decoration of the dinner-table, a matter closely associated with the subject will force itself on the consideration of the gardener or decorator, namely the undesirability of choosing any plant of a dense or bushy habit. Some in their laudable desire to produce a telling display, are apt to forget that the function they are helping to make bright and pleasant is a festive one, and that therefore plants of bushy or dense growth likely to block the line of sight, or in any way to prevent the guests from freely seeing and conversing with one another, should on no account be made use of. I do not mean by this that dwarf bushy plants, both flowering and foliaged, may not be effectively used, for certainly they may if they are dwarf enough, but not otherwise.

The decoration of the table having become such an important part of almost every gardener's duty, it is imperative that he should

recently introduced *Kalanchoe flammea*, a plant which, when better known, will be greatly sought after as a table plant. *Acalypha hispida* (Sanderiana), remarkable for its long pendulous spikes of carmine-coloured flowers, more noted for its curiosity than for its beauty, is frequently made use of. Young plants of this may be brought into flower at all seasons by propagating it from cuttings successively. The white and yellow *Marguerites* should also not be forgotten.

PLANTS WITH FINE FOLIAGE.

Amongst these the genus *Dracena* offers some very useful plants. The best of the red, broad-leaved varieties is *Lord Wolseley*, which is of a brilliant colour, a fine grower, and of handsome aspect; reminiscent in a slight degree of the well known *D. terminalis*, but a marked improvement on that variety. Prince Manouk Bey is another of the broad-leaved red varieties; a first-class subject, and rather richer in colour than *D. Lord Wolseley*, but not so vigorous in growth; *Frederici*, another excellent variety, belongs to the same section; *pendula*, with pendent leaves, is a great im-

provement on the variety *D. Cooperi*. Amongst the indispensable narrow-leaved red *Dracenas* the best are *angustifolia*, *Jamesii*, *The Queen*, and *Miss Glendinning*. The green and white varieties are not of much value as table plants, the best is *Doucetti*, which may occasionally be made use of. The green-leaved varieties on the other hand, when they are young and well-grown, can be employed with good effect. The best of the narrow-leaved *Dracenas* is *Eckhautei*, a variety which grows freely, and possesses a graceful and pendulous habit. Of the broad green-leaved varieties the best is, I think, *D. cannæfolia*, not unlike a *Canna* in growth, it is good for room decoration, or for large dinner tables where bold effect is desired, then it is indispensable.

plumosa and *flexuosa*, *Kentia Belmoreana*, *Phoenix rupicola*, *Rhaphis humilis*, *Thrinax elegans*, *Geonoma gracilis*.

The *Aralia* is another plant entitled to a prominent position as a decorative plant in this connection. The following are among the best, *A. elegantissima*, *leptophylla*, *Veitchi*, and *gracillima*. *Owen Thomas*.

(To be continued.)

THE APIARY.

Swarms.—The month of June, so far, will be remembered amongst bee-keepers as a very bad one, cold and wet, and with very little work going on in the apiary. All swarms,

are firm before ascending to hive the swarm. Turn them over gently, and leave them till nightfall, when they should be placed in position and put into a bar frame as you wish. Should the weather be unfavourable, afford the bees a little syrup—it will pay you, considering the price of sugar.

Bar Frames.—These should be constantly examined, and all sections that are ready should be taken out, and empty ones put in their places; or raise up the crate after giving the bees a little tobacco smoke, and place another one underneath. As a means to prevent killing the bees, draw a carbolio cloth along under the full one, and as soon as you have your top storey full of well finished sections, take it away and

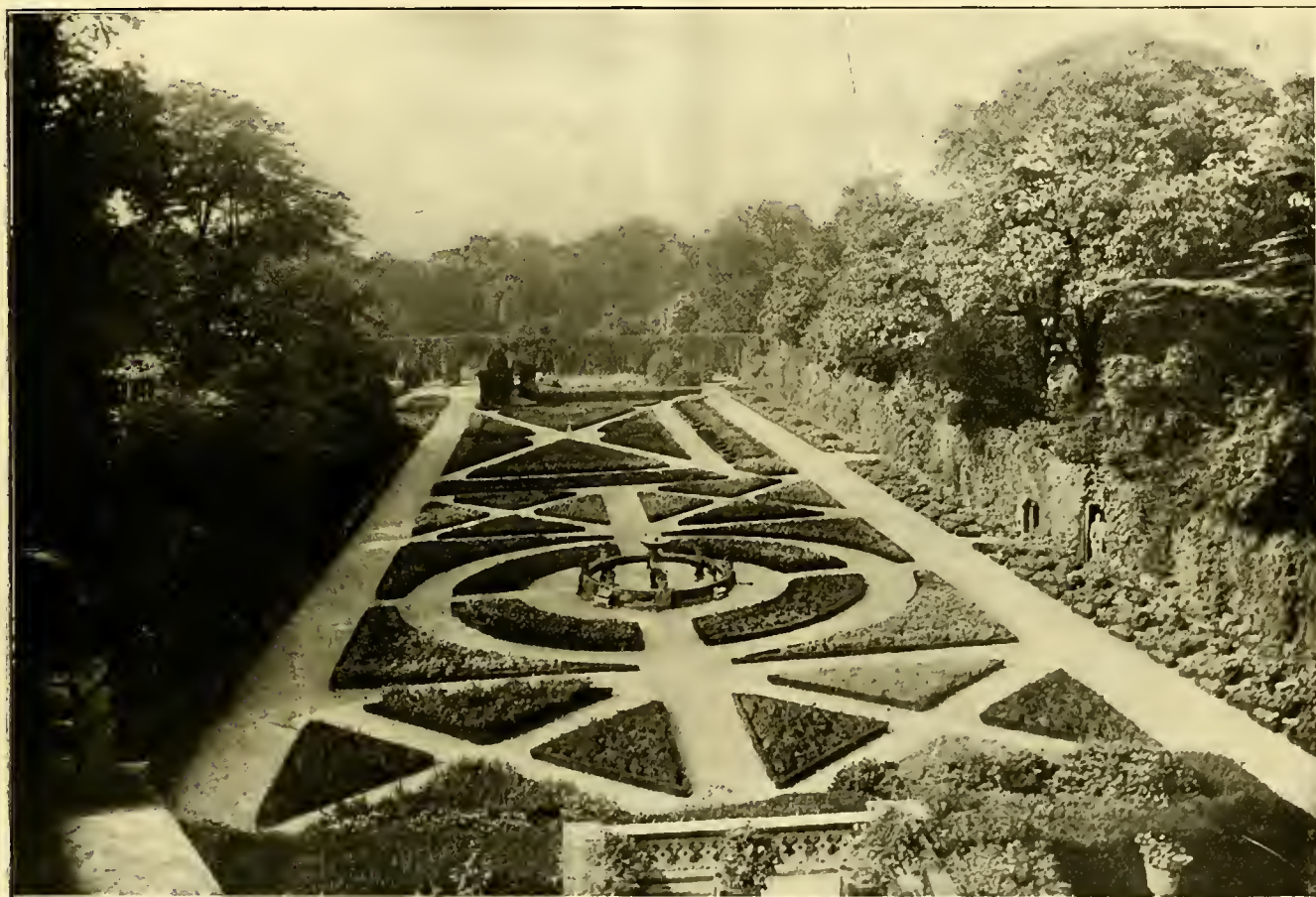


FIG. 169.—THE DUTCH PARTERRE AT HOLLAND HOUSE. (SEE P. 425.)

CROTONS,

now called *Codiaeums*, are of equal importance to the floral decorator as *Dracenas*, and the following varieties are amongst the best. Of the broad-leaved varieties in shades of red, there are *Flamingo*, *Emperor Alexander III.*, *Evansianum*, *Reedi*, *Mortefontaine*, and *Williamsii*. Generally speaking, the narrow-leaved *Codiaeums* are the most serviceable. The best broad-leaved varieties of heavy shades of red, are *Flambeau*, *Aigburth Gem*, *Lady Zetland*, *Prince of Wales*, *Warreni*, and *Lucy*. Amongst the narrow-leaved golden coloured varieties, mention may be made of the following, *Countess*, *Aigburthense*, and *Golden Ring*, the last named one of the very best.

PALMS, &C.

These plants are quite indispensable, and amongst the best and most serviceable for the purpose are the following. *Cocos Weddeliana*,

where honey is required, should be returned to the parent stock. In hiving a swarm, see that no bees are left hanging, as you may perhaps have the queen bee left behind. The skep, which must be always ready in the apiary for immediate use, should be washed out with a little sugar and beer or sweet syrup, but not made too wet; and it should be placed as far under the hanging mass of bees as possible, without touching them or the boughs, holding it securely with the left hand, pulling the skep close in to your chest so as the better to support it, and thus one hand will be at liberty to give the bough a good quick jerk and cause all of the bees to fall into the skep. In doing this, the coat-sleeves should be tied round at the wrist, to prevent bees getting inside them. If the skep is not placed well under the swarm, half of them may drop on to the ground, and some over the back of the skep. If the swarm is at some height from the ground, be sure that the steps

store it in a cool place, where mice, bees, wasps, or dust cannot reach them. Let the sections be divided into three classes of first, second, and third qualities. Care should be taken in handling the sections not to make them dirty, and always to keep the same side up as that which was uppermost when they were taken out of the hive. Honey in shallow frames may be extracted; let the hives and the sections be replaced forthwith, and the honey, being warm, will flow out of them readily.

General Hints.—Let the quilts be carefully examined for the wax-moth; and take measures against ants, which often get into the hives and eat the honey. Mark stocks from which no returns are obtained for future treatment in the autumn. Hives that are leaky should be marked for repair at a convenient time. Any stocks that are short of food may be afforded a small quantity of thin syrup. *Expert*.

WILD CHINESE ROSES.

THE WILD FORM OF *ROSA INDICA*, L., was established by Linnaeus as a species, and the specimen in his herbarium belongs to this species. The plant is not admitted by Hooker as a native of India, and it is excluded from the flora of Japan by Matsumura. It was introduced into cultivation in England by Sir Joseph Banks in 1789.

The only wild specimens known are those collected by me in the glens near Ichang, in Central China; and I have no reason to doubt that they are truly wild. The illustra-

flowering specimens, which have both three and five leaflets; otherwise the leaves are identical.

The wild form may be described as a large climbing shrub, armed with brown, scattered, hooked prickles. The leaves have either three or five leaflets, which are ovate or elliptic, acuminate, serrate; they are dark green above, and glaucous underneath. The stipules are narrow, adnate almost to the top, finely-toothed on the edge, and ending in a subulate point. The flowers are solitary, thus differing from many cultivated

THE WILD FORMS OF *ROSA BANKSIE*.

Lady Banks' Rose was first introduced into England in 1807, by Kerr, and this was the double white-flowered variety. The yellow double-flowered kind was brought in later by Parks, in 1824. Under cultivation a single state of the last has been obtained, which is described and figured in *Bot. Mag.*, t. 7171. In the wild state, yellow flowers do not seem ever to occur.

This Rose is recorded as occurring wild in Japan by Franchet and Savatier (*En. Pl.* i., 137), as it was supposed to have been col-



FIG. 170.—WILD FORM OF *ROSA INDICA* (THE ORIGINAL OF OUR TEA ROSES), GATHERED AT ICHANG BY DR. HENRY.

tion (fig. 170) now given is taken from my No. 1151, which shows the plant in flower. The fruit shown is from No. 4131. No. 1151 was collected in the San-yu-tung glen, off the Ichang gorge, in two places, where the Rose occurred as a large shrub climbing over rocks, with single flowers, generally deep red, but occasionally pink in colour; these specimens were collected in April. No. 4131 in fruit was collected on July 31 in a wild glen also on the Ichang gorge, but on the opposite side of the river, many miles distant to the south-west. My note taken at the time says that it resembled the Banksia Rose in habit, i.e., it was a large, straggling climber on the side of the ravine. This specimen shows only trifoliate leaves, and these are smaller than those of the

forms. There is a specimen, No. 96, in the Kew Herbarium, collected by Oldham in Formosa, which has single flowers; but I doubt this being a wild plant. The leaves are very different in aspect from the Ichang plant; they are not glaucous underneath.

Rosa gigantea, Collett, which was discovered in the Burmese Shan States, was also found by me in Yunnan. It is close to *Rosa indica* in technical characters; but it may be readily distinguished by the much larger flowers, which are always white. The sepals have not the curious appendages that occur in *Rosa indica*. In *Rosa gigantea* the leaves are often seven-foliate, and the fruit is much larger than in the other species.

lected there by Siebold. It is, however, excluded from the flora of Japan by Matsumura, and it is now known to be a native of the western mountainous half of China. It has been gathered wild by David in Shensi, by Potanin in Kansu, by myself in Hupeh and Szechwan, and by Delavay in Yunnan. Through this wide range of latitude, the plant exhibits considerable variation. In the Kansu specimens the leaves are small, often trifoliate, and hairy. In my Central China specimens the leaflets are glabrous, variable in size, and generally five in number. Delavay's Yunnan specimens are nearly glabrous, and the leaflets are more often seven in number. In cultivated forms the leaflets are nearly always five, as the third pair of leaflets is seldom deve-

loped. In cultivated plants prickles rarely occur, whereas in the wild form they are nearly always present.

The illustration now given (fig. 171) is taken from my No. 5552, which was collected in South Wushan, in Szechwan, in ravines and hedges, at 2000 to 3000 feet altitude. This Rose is also common in the province of Hupeh, in the Yangtse gorges near Ichang, where it is a large climber, hanging down from cliffs (my Nos. 1153, 2922, 3198). In my specimens the plant is glabrous, always armed with hooked prickles, somewhat dilated at the base. The leaflets are generally five in number, though three and seven occur; they are more or less ovate-lanceo-

introduced into Japan and Europe. It is known to the Chinese as Mu-hsiang, i.e., "wood-fragrance." It is figured and described in the *Chih-wu-ming*, xxi., 47, as a cultivated double-flowering Rose, with five-foliate leaves. The author mentions several kinds: "That with small white flowers which have a purple centre, is most deliciously fragrant. The non-fragrant variety has yellow flowers, with a green centre." He also speaks of a third kind, with large, white flowers, not remarkable for their fragrance. His remarks on the two first kinds agree with the figures of the forms originally introduced into England. The cultivated yellow double-flowered variety is less fra-

tions the Banksia Rose as having small fragrant flowers, and this work was written in 1578.

Rosa microcarpa, Ldl., bears a considerable resemblance to *Rosa Banksia* in the shape of the leaflets and of the stipules, and in the smallness of the flowers and fruit; but in it the styles are coherent. The most obvious distinction lies in the outer sepals of *Rosa microcarpa*, which have spinules on the back, and denticulate or spinuliform appendages on the margins. These spinules, &c., are totally wanting in *Rosa Banksia*.

Rosa Colletti, Crépín, discovered in the Shan States of Burma, is very close to *R. microcarpa*, agreeing with it in styles, appendaged



FIG. 171.—ROSA BANKSIA, WILD FORM, GATHERED BY DR. HENRY.

late and serrulate. The stipules are very characteristic, being long bristles; they drop off early, and are only to be seen on some of the flowering specimens. The flowers are small, white, and fragrant; they are borne in false umbels, which are generally many-flowered, but in some cases are much reduced, so that only two flowers occur.

Delavay's Yunnan specimens at Kew are only in fruit; they show seven leaflets, and are glabrous and prickly. Franchet, however, in describing the flowering specimens sent by Delavay, says that they are unarmed sometimes, and that three and five leaflets occur, which are pubescent on the median nerve, and occasionally also on the petioles and petiolules. Potanio's specimens are very pubescent on the petioles and petiolules.

There are specimens at Kew, No. 10,508, which were obtained by my native collector in Yunnan. They are semi-double, and evidently cultivated; they have long, narrow, small leaflets, seven in number.

The Banksia Rose has long been cultivated in China, and from that country it has been



FIG. 172.—LEAF AND STIPULES OF ROSA BANKSIA.

grant than the white-flowering kind in this country; and the stigmas, &c., in the centre of the double flowers show the difference in colour in the two kinds that is noted by the Chinese author. The Chinese Herbal men-

sepal, &c. It is apparently a tomentose geographical form of that species, and is interesting, because we find in certain plants (such as *Albizia Julibrissin*), tomentose forms as we leave China and get into the warmer regions of Burma and India. *Augustine Henry*.

HOME CORRESPONDENCE.

A VISITATION OF LOOPER CATERPILLARS.

—I have enclosed for your inspection some shoots of the Apple, Oak, Hazel, Ash, and Willow, to show the ravages the looper caterpillars are committing in our usually luxuriant woods. Many of the Oaks are as black and bare as at mid-winter. This part of Berkshire suits the Oak admirably, and when Oak was largely used in the Royal dockyards, a timber merchant assured me that some of the best quality was grown in this district; but to see fine trees denuded of their foliage in leafy June is a sad sight. Many of our neighbours are in like plight; bird-life is very abundant, flocks of rooks, starlings, and small birds, seem revelling in an abundance of food, without seeming to lessen the plague. The

cold spring we have passed through seems to have been favourable to insect life, and I have previously noticed that such insect visitations are worse in cold ungenial springs. The larva of the winter-moth in the autumn and winter months were unusually fine, and in consequence a larger number of eggs were deposited on suitable trees; and in spite of repeated syringings with insecticides, I fear our Apple crop will be a very poor one. I observe the Californian growers of fruit have succeeded in some cases in introducing insect foes to clear off the insects which destroy the fruit crops. Such a visitation as this present one seem too numerous for birds and insecticides to cope with. *R. M., Newbury, June 16, 1902.*

NIPHETOS ROSE OUTDOORS.—The flower of Niphetos Rose which I send for your inspection is a very large one and past its best; but our vicar, the Rev. A. S. Travers, has just sent it to me to ask if it was not a really fine one. He has a very large tree trained on the S.W. side of his house. I should think a space of wall 11 feet by 15 feet is covered with this tree; in fact, I never before saw such a fine tree of this variety growing outside. He has caused sewage to be put to the roots, otherwise nothing else has been done. *W. A. Cook, gr., Erlestoke Park.* [We have also never seen a bigger bloom of this variety. *Ed.*]

RICHARDIA PENTLANDI.—In answer to Mr. Adams on the flowering of this beautiful Richardia, I may say that my employer sent here a small plant which he purchased in Cape Town in the year 1896. It did not flower the following season, but has done so every season since, and besides having increased in size, it has produced a number of young side-tubers, the stronger of which have already flowered. I may also mention that some of *R. Elliotiana* here are showing flower, but I observe the spathe is not of so rich a colour, and lacks the black spot at the base, which adds, as I think, so much to the beauty of *R. Pentlandi*. The plants grow in an intermediate-house, in fairly rich soil. *D. Buchanan, Bargany Gardens, Daily, Ayrshire.*

LABURNUM SPORTS.—The shoot which I forward for your inspection was taken from an old Laburnum tree on the estate of Mrs. Murray, Mytchett Place, Frimley. There are to be seen three distinct varieties of colour, viz., yellow, and the two enclosed. The purple piece has quite a different habit from the others, it comes out of the stems in the shape of a bird's nest, or those with shoots seen sometimes on the Birch. What is also singular are shoots, 4 or 5 feet long, furnished with brick-red coloured flowers, and at the end of these shoots, 3 or 4 feet of yellow, which makes the tree a very interesting object. I might here notice the small-flowered pieces enclosed grows upright, and does not attain more than a foot or so in length; there are three of these sports in the tree. *Edward Bennett, Farnborough, Hampshire.* [*Cytisus Adami* ×, the result of budding *Cytisus purpureus* on to *C. Laburnum*. *Ed.*]

Obituary.

EDWARD EVANS.—We regret to record the death of this gentleman, which occurred suddenly on Saturday, the 14th, at Rosedale, Bowness, Westmoreland. Death was due to heart failure. He was the only son of Mr. George Evans, farm bailiff to the late Earl of Stamford, Enville Hall, Staffordshire. Before coming into Westmoreland, he was in the gardens of the Duke of Devonshire, Chatsworth. At the age of twenty-seven he was appointed head gardener to the late Rev. Thomas Staniforth, Stores, Windermere. Of late years he had been with Captain Armitage, Waterside. He was well known in the district, and for many years was judge at the principal flower shows in the North. The funeral took place at the Bowness Cemetery. Mr. Evans leaves a widow and three sons and four daughters.

CORONATION ITEMS.

WE are receiving numerous enquiries and telegrams daily, asking for quotations for distinct colours of Roses, particularly crimson, one enquiry being for 5,000. Owing to the late season and cold nights, we are unable to guarantee delivery for a large number for Coronation week. Certainly the outlook at present is not at all encouraging to Rose-growers. Last season, at this time, we were cutting a fair quantity of blooms from plants in the open. Jubilee year, 1897, we supplied from 12,000 to 13,000. *D. Prior & Sons, Colchester.*

I FEAR the outdoor Roses will not be in bloom till after the Coronation, so that I have not at present heard of any very large orders for Roses, probably because they are not to be had in quantity. There will probably be more demand next week, as the Coronation itself seems to dwarf everything else. We have had splendid rains, and the Roses will, I think, be extra good when they do come; but they will be quite a fortnight behind their usual time. *Geo. Mount, Canterbury.*

SOCIETIES.

ROYAL HORTICULTURAL.

JUNE 24, 25.—The Holland House Coronation Rose Show has been held, but an event that has been looked forward to with an unusual amount of interest has suffered from several untoward circumstances, that somewhat marred its success. Essentially regarded for many months as a Rose Show, it has proved to be an exhibition of a very miscellaneous character, in which Roses were perhaps the weakest feature. This was the result of the exceptionally bad weather, and everyone expected it. Of quite different and more serious nature was the announcement at noon on Tuesday that, owing to the serious illness of H.M. THE KING, the Coronation would necessarily be postponed, with all its attendant festivities. At Holland House the Royal Horse Guard's Band was to have played during the afternoon, but an order from the War Office peremptorily demanding that all soldiers should be confined to barracks, prevented any music whatever.

Under all the circumstances, it is not surprising that considerable gloom was observable at a time when the event should have been at its best. Everyone deplores the circumstances, and above all the cause of them.

The show itself was a very pretty one, exhibiting considerable deviation from the excessively hard and fast rules that are necessary in the grounds of the Inner Temple. There were five tents, besides the special exhibit of Messrs. SUTTON & SONS, and on the whole they provided a covered area of about 12,000 square feet.

Throughout the afternoon, there was a large and fashionable attendance, and as the lovely gardens attached to the house were thrown open on Tuesday in the interests of the two horticultural charities, by the kindness of Lord LICHETER, we believe these deserving institutions will benefit to a considerable extent.

Floral Committee.

Present: J. F. McLeod, John Jennings, Jas. Hudson, W. Howe, E. Molyneux, C. R. Fielder, R. Dean, G. Reuthe, Rev. F. Page Roberts, Charles Blicke, W. P. Thomson, W. J. James, R. W. Wallace, E. H. Jenkins, W. Bain, Herbert J. Cutbush, Chas. Jeffries, W. Cuthbertson, R. Wilson Ker, N. F. Barnes, J. H. Fitt, C. W. Knowles, and Chas. T. Druery.

GROUPS OF STOVE PLANTS.

Mr. H. B. MAY, Dyson's Road Nursery, Upper Edmonton, had a very fine group of plants in the tent containing the Orchids. Ferns were, as usual, in Mr. MAY's exhibits, a feature; and the small groups of *Adiantum tenerum* A. Farleyense, single plants of *Polypodium Mayi*, very choice varieties of *Gymnogramma*, *Cheilanthes tomentosa*, *Davallia fijiensis gracillima*, &c., were exceedingly pretty. Then, too, we noticed excellent plants of *Aralia elegantissima*, *A. Veitchii*, *Dieffenbachia Neumani*, *Asparagus Sprengeri compacta*, *Phrynium variegatum*, of capital colour, &c. A col-

lection of very highly coloured *Codiaeums* included the varieties Thomsoni, Prince of Wales, Comte de Germiny, superba, Golden Gem, Flambeau, &c. There were also select varieties of *Cordylines* (*Dracenas*).

In addition to the Ferns and foliage plants shown by Mr. H. B. MAY, that exhibitor had a very extensive group of *Pelargoniums* (zonal), double and single flowered, also Ivy-leaved *Pelargoniums*, &c. All of them were very bright in colour, and were strongly grown.

A well grown miscellaneous group was shown by JEREMIAH COLMAN, Esq., Gatton Park, Reigate (gr., Mr. W. P. Bound), *Codiaeums* forming the backbone of the display, fully coloured in the majority of the plants; *Queen Victoria*, *Weismanni*, *Lady Zetland*, *Smithiana*, having the highest coloured foliage.

Messrs. SANDER'S *Pandanus Sanderi* was a fine plant with the white variegation well brought out; *Dracena Sanderi*, two examples of which were admirable; the creamy-white variegated *Dracena Alexandra* well exhibited its worth as a decorative subject; *Ficus pandurata* was shown with foliage 9 inches long and 6 inches broad; *Alcacia Alexandra Regina*, a fine decorative plant with whitish ribs and dark green ground (new plant); *Dracena Broomfieldi*, a species with pure white variegation, and close compact habit; *Heliconia Edwardus Rex*, a splendid plant with Canna-like foliage of crimson colour, and the same coloured petioles (new plant); *Tillandsia vera*, *Vriezias*, including *V. Germyniana* with tessellated leaves, and of a dwarf habit. We noted on a side table a small group containing *Acalypha Sanderi*, alba, with tails of creamy-white; *Heliconia Sanderi*, &c., *Asparagus Sprengeri* variegatus, with cladodes of a whitish tint, a big example with branches 6 feet long. Several *Nepenthes* were shown in this exhibit.

Messrs. WOOD & SONS, Wood Green, London, N., exhibited a group of plants in pots and in baskets, illustrating their handsome wire baskets, specially designed for use in decorative arrangements connected with the Coronation.

Aquilegias, or the old *Columbines*, were shown extensively and well by Messrs. H. CANNELL & SONS, Swanley, Kent, who put up in the Orchid-tent a very large number of bunches of these fragrant flowers, which nowadays exhibit so many tints of colour. This was a very fine exhibit.

The best exhibit of tuberous-rooted *Begonias* we have seen this season was put up by Messrs. B. R. DAVIS & SONS, Yeovil Nurseries, Somerset. It stretched upwards of 200 feet along the side stage in the Orchid tent, and every plant was exceedingly well grown. New varieties were plentiful, and in the single and double-flowered sections alike, they were of the largest size, and most brilliant colours. Some of the more prominent of the double varieties included *Hawk*, double crimson; *The Sirdar*, double orange-scarlet; *Fire Queen*, 6 inches across, bright scarlet; *Prince George*, Ben Davis, apricot colour; *The King*, rose colour, exceedingly large; *Coronation*, wonderfully bright orange colour, very distinct; *De Wet*, pink, &c. There were crested and fimbriated varieties also, and a single-flowered one named *Leopard*, curiously mottled, scarlet and white.

Begonias.—Messrs. J. PEEN & SONS, nurserymen, West Norwood, staged a good collection of *Begonias* which included of double varieties, *Lord Kitchener*, scarlet; *Princess of Wales*, white; *John Peen*, salmon; *Lord Roberts*, crimson; *Cherub*, orange, very fine; *Maid of Honour*, pale orange; *Florian*, bright rose; *The Queen*, salmon; *Roupeil*, cream; *Prince of Wales*, deep crimson; and, in addition, some very fine single varieties, and also four boxes of fine blooms of double and single varieties.

In a general collection of plants, Mr. H. J. JONES, Ryecroft Nursery, Levensham, had some fine single *Begonias*: *Sylvia*, white; *Jealousy*, yellow; *Mrs. L. Lunt*, fine salmon; and of double, *S. T. Peters*, fine crimson, the flowers fringed; *Arthur Wain*, bright scarlet; *Ellen Terry*, pink, arranged with *Pelargoniums* and foliaged plants, *Astilbe Silver Sheath*, *Acalypha hispida*, &c.

Gloxinias.—A showy group of these was shown by Messrs. JAMES CARTER & CO., High Holborn, W.C.; a very good strain. At the back of the plants was a large cone of *Lily of the Valley*, the whole fringed with foliage plants.

Messrs. SUTTON & SONS, Reading, exhibited a group of their excellent *Gloxinias*, in a huge "Wardian-case-like" structure, 10 ft. square each way, and very lofty. The style of arrangement permitted the plants to be seen perfectly, and tastefully interspersed with *Adiantums*, and this novel system of display was much admired. The principal varieties were *Scarlet Queen*, *Duke of York*, *Reading Scarlet*, *Her Majesty* (white), *Violet Queen*, *Spotted hybrids*, *Sutton's Purple Empress*, &c.,

&c., and every one of the plants was an illustration of high class cultivation.

Rhododendrons.—A very fine bank of these was staged by MESSRS. JOHN WATERER & SONS, nurserymen, Bagshot. It included several very fine varieties, such as Viscount Powerscourt, bright rose heavily spotted; Marchioness of Tweedale, very bright rose, yellow centre, fine pip and truss; Lady Clementine Walsh, bluish edging on a white ground, with very large petals and free-blooming; and Lady Hillingdon, pearly-white with yellow centre, and very fine truss, a very hardy variety; others were Marquis of Waterford, bright rose, light centre; Duchess of Connaught, white, with yellow centre; Kate Waterer, very fine; Sappho, white, with heavy chocolate blotches; Princess of Wales, white, the flower edged pink; Helen Waterer, white, scarlet edge; R. W. Elliott, bright pink, well spotted and very fine, one of the latest flowering varieties; Profusion, bluish white, yellow centre, very free; and Mum, clear white, one of the best. This collection was edged with plants of *Kalmia latifolia*.

Miscellaneous Plants.—A very fine and imposing collection of plants was staged by MESSRS. JAMES VEITCH & SONS, Kings Road, Chelsea. This included Palms, such fine *Crotons* as Prince of Wales, Warreni, Reidi, &c.; *Lilium Henryi*, *Medinilla magnifica*, fine pieces of *Nepenthes sanguinea*, distillatoria, *Curtisii superba*, *Mastersii*, mixta and *Ameisiana*, *Kalanchoe flammea*, very handsome *Streptocarpus*, *Dracena Goldiana*, *Eleocharis reticulata*, a white-flowered evergreen cold greenhouse shrub; *Alcacia Watsoniana*, *Solanum Wendlandi*; *Dracena Godseffiana*, cut branches of which will stand in water for three or four weeks, and some very attractive *Orchids*.

A group of mixed plants was exhibited also by Messrs. H. Low & Co., Bush Hill Nursery, Enfield, who had Palms, *Fuchsias*, *Hydrangeas*, blue and pink flowered *Crotons*, *Dacnusa*, *Liliums*, *Anthurium Scherzerianum*, *Pinelia mirabilis*, *Pandanus*, *Tremandra verticillata*, *Dracophyllum gracile*, &c.

Mr. WILLIAM ICETON, nurseryman, Putney, had a group of *Lily* of the Valley, backed by fine foliage and flowering plants, all neatly edged with small foliaged plants.

MESSRS. GEO. BUNYARD & CO., nurserymen, Maidstone, in addition to Fruit, had a very interesting collection of hardy and Alpine plants, which included *Iris*, *Gaillardias*, *Lupinus*, *Hedysarum multijugum*, *Geum minimum*, *Paeonies*, *Sedum Kumschatium*, *Heuchera macrantha*, *H. brizoides gracilima*, *Saxifraga longifolia*, *Pentstemon digitata*, *Iris spuria*, blue, and *I. Madame Patti*, yellow, with dark falls, &c.

MESSRS. J. CYPHER & SONS, Queen's Nursery, Cheltenham, set up in the large tent a group of plants, in which *Orchids* figured very largely, and brilliant foliage plants, which made the hues of flowers more particularly striking and effective. It was generally admitted that this was one of the best things of the kind that Messrs. CYPHER had ever accomplished. It was the admiration of all who saw it. To describe its details would fail to give any approximate idea of its exquisite beauty.

MESSRS. J. HILL & SON, nurserymen, Lower Edmonton, also had a very fine feature in the large tent, in the form of a collection of Ferns of very high excellence. The system of naming adopted made it very difficult to gather up a list of the leading sorts shown; but *Pteris tricolor* could be seen very richly marked. Other fine ferns were *Adiantum macrophyllum*, *A. rodophyllum*, *A. scutum roseum*, *Cheilanthes elegans*, *Adiantum tinctorum*, *Woodwardia orientalis*, *Pteris Smithiana*, &c., and there were charming panels of *Saxifraga sarmatensis variegata* very richly coloured.

MESSRS. FISHER, SON & SIBBAY, Handsworth Nurseries, Sheffield, had a superb group. Among the novelties in plants were *Aralia crassifolia*, with its peculiar pendent growth, and two fine examples of *A. pulchra*, both very handsome. *Anthurium sanguineum* of very fine colour. *Nepenthes cylindrica*, *Phormium tenax nana purpurea*, a very distinct form, quite new, &c. The whole was surmounted by noble palms and rich-leaved *Codiaeums*: *C. Her Majesty* and *C. Reidi* were particularly noticeable.

MESSRS. BLACKMORE & LANGDON, Bath, showed a very fine lot of tuberous *Begonias*, flowers of remarkable size and good form, as may be gathered from the fact that several obtained the Award of Merit. The certificated kinds will be found under awards.

CARNATIONS.

A really magnificent collection was staged by MARTIN R. SMITH, Esq., Hayes Common (gr., Mr. C. Blick), which included some magnificent *Malmaison* varieties, such as *Calypto*, fine bluish; Mrs. Martin R. Smith, a very pleasing pink; King Oscar, bright scarlet; Mrs. Trelawny, orange red; Miss Maud Sullivan (new), orange scarlet; Mrs. George Devay (new), pale orange scarlet; Lawford (new), crimson; Yaller Gal (new), soft yellow; Sarah Bernhardt (new), soft pink with slight blotches of rose; and such border varieties as the Yellow Leaf *Cecilia*, shown in splendid character;

Orient, creamy ground edged with purple, *Lily Duchess*, fancy yellow ground, edged with rose; Amphion, fancy yellow edged with bright rose; Paladin, cream ground edged with crimson; Horsal, a fine picotee edged with deep rose; Othello, creamy ground, edged with cerise; Childe Harold; Countess of Verulam, yellow ground, edged with bright rose, &c. This fine collection was admirably arranged by Mr. C. Blick.

MESSRS. W. CUTBUSH & SON, The Nurseries, Highgate, N., had a large and very imposing group of Carnations backed with Palms, Bamboos, &c., and included such flowering plants as *Lantanas* in variety, *Ericas hybrida Cavendishiana*, *Ventricosa* in varieties, &c., in the foreground being a fine cone of *Carnation Cecilia* and another of popular border varieties. The group contained several new forms of *Malmaison*, such as Maggie Hodgson, deep crimson and clove-scented, Albion Scarlet, Florizel bright Scarlet, Baldwin, pink; Monk, cerise crimson; Juliette, crimson; Lady Rose, rose; Mrs. M. R. Smith, flesh colour; and such fine border varieties as *Cecilia*, in very fine character; Isinglass Vashti, a yellow ground splashed with red; Mrs. Treloayne; The Procter, yellow ground edged with salmon; Monarch; Mrs. Nicholson, self-pink; Lady Mimi, salmon; &c.; with *Verbena* Miss Willmott, a very attractive pink variety.

Mr. CHAS. TURNER, Royal Nurseries, Slough, showed some cut flowers of varieties of Carnations, most of them new border varieties, but including a few of the *Souvenir de la Malmaison* section.

HARDY FLOWERS.

As may naturally be expected, the hardy flowers constituted not merely a gay portion of this remarkable exhibition, but also a formidable item in their great array and variety. Indeed it is doubtful whether these flowers have ever been so well seen before, the plants and flowers, by the greater admissible space, telling to great advantage. We take them, therefore, as we find them in the tents for convenience sake.

The MESSRS. PAUL & SON, Old Nurseries, Cheshunt, set up a nice lot of things, of which we noted *Heuchera hybrida*, with rosy flowers; *Lychnis flos cuculi* fl.-pl., *Lupinus arboreus* Seow Queen; some noble towering spikes, five feet long, of *Verbascum olympicum*, *Linum arboreum*, *Campanula mirabilis*, large blue bells, *Orchis foliosa*, *Tropaeolum polyphyllum*, *Paeonia Whitleyi*, snow white petals, with a tuft of gold anthers; *Gunnera scabra*, *Oenothera*, Double Rockets, *Columbines*, and many others. All were set up in good fashion, the value of the items being well seen.

Mr. M. PRICHARD, Christchurch, Hants, followed with a splendid arrangement of the better things in fine masses; some of the best were *Coronilla iberica*, *Orchis maculata*, *Tropaeolum Leichtlini*, *Dianthus annulatus* and *Papaver pilosum*. These were supplemented by large groups of *Pyrethrums*, of Spanish *Iris*es, of Oriental *Poppies*, *Lupines*, *Senecio*, *Doronicum*, &c. *Salvia Denori* is also a notable thing in blue-flowered plants.

Mr. A. W. WADE, Colchester, showed *Poppies*, *Ixias*, Spanish *Iris*es, *Hieracium villosum*, and other showy subjects in some variety.

MESSRS. GEO. JACKMAN & SONS, Woking, again put up one of their characteristic displays, embodying Alpines with the best of herbaceous things. Among the foremost things were *Ramondias*, single and double *Pinks*, *Aubrietias*, *Lilium Henryi*, *Delphinium cashmerianum*, *Orchis foliosa*, hardy *Cypripediums*, *Dianthus Napoleon III.*, *D. cæsius*, *Edelweiss*, *Campanula muralis*, the pretty pink *Lychnis Lagace*, the cobweb *Semprevivum*, masses of *Incarvillea*, *Dictamnus fraxinella*, hosts of *Iris*es in several sections, and many more. All beautiful and gay and fresh.

Sweet Peas were a chief exhibit of MESSRS. JONES & SONS, Shrewsbury, who had a fine display of these indispensable flowers. A few of the best were *Duchess of Westminster*, buff; Princess of Wales, rose, lovely pink; Hon. Mrs. G. Kenyon, nearly yellow, and very fine *Salopian* crimson; Lady Grisel Hamilton, pale mauve; Queen Victoria, buff; Black Knight, gorgeous &c., &c. In all there were fifty-five varieties shown, and with Spanish *Iris* and other flowers made a fine display.

Mr. R. C. NOTCUTT, Ipswich, set up a fine group of *Arctotes capitata* in full bloom, the flower heads large, and in capital condition.

Mr. T. S. WARE, Feltham, Ltd., had an excellent group of the bolder things, with a nicely set up lot of Alpines in the centre. The plants were very numerous, and but a fragment only can be given. Of these the finest things were *Verbascum olympicum*, *Paeonia albiflora*, a grand

lot. *Dianthus neglectus*, *Heuchera* in grand masses; *Ostrowskia magnifica*, *Paeonia Whitleyi*, *Watsonia O'Brieni*, *Lilium excelsum*, *L. rubellum*, *Thalictrum*, *Edelweiss*, &c. *Delphiniums*, early *Phloxes*, *Pyrethrums*, and others were well shown.

A new *Helenium* is *H. grandicephalum atropurpureum*, a nearly crimson self, that should prove of service.

Mr. AMOS PERRY, Winchmore Hill, upon this occasion surpassed himself in a really stupendous exhibit of the best things in commerce. The hosts of the hardy things we can hardly allude to, but we cannot omit what was indeed a bright idea as well as a novel feature of the exhibit. This is the water garden study at one end of the group. Here were seen small glass aquaria in variety, filled with a great variety of plants, and surrounded with suitable growing marsh or aquatic plants. Words can hardly do justice to the cooling as well as pleasing effect of this novel departure, and Mr. Perry is certainly to be congratulated upon the innovation. The arrangement extended over the central table, and in the front were shallow tanks of the newer *Marliac Water Lilies*. In these we noted the somewhat tender kinds, such as *stellata* var. *zanzibarensis rubra*, quite a new shade in these beautiful semi-hardy kinds. Of other sorts *William Doogue*, a grand white, *Marliacea carnea*, *Laydeckeri* prolifer, and many others. Indeed, some twenty-two kinds in all were shown. In addition such things as *Nuphar primula*, *Osmundas*, *Chrysobactron Hookeri*, *Gunneras*, *Alismas*, *Myriophyllum Proserpinoides*, all assisted in the make up of a realistic water-garden in miniature. The hosts of hardy flowers, *Iris*es, *Calechorti*, *Dianthus alpinus* (a charming lot), and many others in large, telling blocks were all beautiful and interesting, but space forbids the enumeration of a class of plants for which Mr. Perry has long been noted.

The MESSRS. WALLACE & CO., Colchester, departed from their usual method by arranging their groups of well-grown plants on the grass. In this way everything was seen to advantage. Indeed, one looked down upon a border of flowers which, if garish by the restricted space of the tents, at least gave a natural view to the things as a whole. In this way *Paeonies*, Spanish *Iris*es, the lovely *Calechorti*, *Inula glandulosa*, *Heucheras*, such as *H. sanguinea*, *H. brizoides gracilima* and others were very fine. In addition many *Iris*es of the *I. spuria* group, *I. sibirica*, in variety, *Lilium Henryi* very fine, *Gerbera Jamesoni*, *Inula glandulosa*, *Achillea mongolica*, pure white, with many *Liliums*, *Lupines*, *Dictamnus*, *Paeonies* and other showy flowers made up a really fine display. *Sparaxis Fire King* was indeed brilliant, and attracted much attention.

MESSRS. W. CUTBUSH & SONS, Highgate, showed the new *Anemone* flowered *Marguerite*, *Chrysanthemum frutescens Coronation*, a pure white sport from the type. There must have been some 300 or more plants shown.

MESSRS. DOBBIE & CO., Rothesay, showed hybrid *Columbines*, *Violas* and Sweet Peas in all their charming and well-known variety.

The MESSRS. BARN & SONS, Covent Garden, filled the entire side of one tent with their famous hardy flower. There were *Pansies*, *Flag Iris*es, Oriental *Poppies*, *Pyrethrums*, *Delphiniums*, *Poppies* of the nudicaule section, *Pinks*, double and single flowered, early *Phloxes*, *Lychois Haageana*, *Iris orientalis*, and others, in such masses as to defy description. The masses were well disposed on this occasion, and with greater space displayed their kind to advantage. In addition, a great number of smaller yet rarer things were shown, and of these we notice *Phlox ovata*, *Dictamnus*, *Lychnis Haageana*, very fine; the pure white *Eastern Iris*, *I. orientalis*, *Snow Queen*, a pure white flower of some worth. Apart from these the firm had a large group of the Japanese *Pigmy Trees*, not a few of the examples ranging from thirty to forty years old. Some, indeed, as *Larix leptolepis*, was stated to be fifty years. A large number of *Thuja obtusa* was shown.

Lobelia, Chapman's King Edward, a deep purple blue, with white eye, was shown by Mr. W. J. CHAPMAN, Grangemouth, and *Viola Maggie Mott*, soft mauve, was from Mr. F. BURNETT, Sunningdale, Berks.

MESSRS. KELWAY & SONS, Langport, Somerset, had a fine lot of *Paeonies* and *Delphiniums*, the great variety far too numerous to mention. *Portia* in the former was a fine white. *Sir Aga Khan* pink with gold anthers, *Miss Ada Chamber's* *Satin* pink were among the finer.

Mr. R. SYDENHAM, Birmingham, showed Sweet Peas in variety, and Mr. W. J. GODFREY some fine *Poppies*.

MESSRS. J. LAING & SONS showed *Thunias coccinea*, with *Iris*es, *Dianthus* and other hardy flowers. Unfor-

innately stove and greenhouse things were mingling with hardy things in this lot, and it was not possible to make separate lists.

Mr. B. S. WILLIAMS, Holloway, showed Spanish Iris in the usual market massed bunches together with *Verbena Miss WILLMOTT*, a fine pink; *Spiraea astilboidea*, *Lixias* and other flowers.

MESSRS. CARTER & SONS, Holborn, showed a collection of Pigmy trees in which *Juniperus chinensis procumbens* was noticeable. In another direction Irises, Lupins, Pyrethrums, Alpines, were arranged in a miniature rockery and in vases.

Sweet Peas were shown by Mr. PERCY WATERER, Fawkham, Kent, in great variety, and in nicely arranged groups—in vases.

The Misses HOPKINS, Knutsford, Cheshire, had a small bank of Alpines, and other dwarf plants in a bank of moss.

GROUP OF HARDY PLANTS ARRANGED ON THE TURF OUT-OF-DOORS.

These groups in every case abutted on the various marquees and faced inwards to the area set apart for promenading.

THOS. CRIPPS & SON, Tunbridge Wells Nurseries, Kent, exhibited a large group of tall and dwarf plants of Japanese Maples, comprising most known varieties. There were some handsome specimens, and showing good cultivation. The plants were well established in pots, good for planting in the open ground, or for conservatory decoration. Many were fairly regular standards, and the remainder spreading bushes.

MESSRS. J. CHEAL & SONS, Crawley, Sussex, showed a group of about 80 square yards in area, consisting of a miscellaneous assortment of flowering and foliage plants of a hardy nature. Notable species and varieties were tree Ivy, *H. marmorata variegata*, *Spiraea Fröbelli variegata*, *Robinia pseudo-acacia aurea*, a soft yellow tint of foliage; *Abies pungens glauca*, capital examples; many *Retiosporas*, *Cupressus*, *Taxus*, including *T. baccata erecta semper aurea*, *Thuia*, with yellow variegation more or less constant the entire year, *Cupressus Lawsoniana Wesslii*, has an intensely dark green foliage, which is very compact and close to the shoots, making a neat pyramid or column; *Juniperus virginiana Schottii*, *Cupressus thyoides variegata*, *Picea nobilis glauca*, a golden form of *Juniperus communis*, *Abies excelsa Maxwellii*, apparently a dwarf form; *Abies Hookeriana*, *Arthrotaxus imbricata*, a golden variety of the Deodar Cedar; a nice vigorous tree of *Salisburia adiantifolia*, *Andromeda japonica*, *Kalmias*, *Cornus mas elegantissima*, *Cedrus verticillata glauca*, with blue-green needles; *Quercus purpurea*, and other species.

Mr. HENRY DREER, 71, Chestnut Street, Philadelphia, exhibited flower-buds of *Nymphaea James Brydon*, *N. Wm. Doogue*, *N. alba var. Gladstonei*, and *N. tuberosa var. Richardsoni*.

MESSRS. W. CUTBUSH & SON, Highgate, N., and Barnet, Herts, exhibited an immense number of plants cut into the shapes of birds in variety, serpents, ships, baskets, wheelbarrows, crowns, and an arm-chair. Box and common Yew were exclusively employed.

MESSRS. JOHN LAING & SONS, Forest Hill and Catford, exhibited a miscellaneous group of hardy subjects, such as *Rhododendron hybridum* in variety, of which *Douglas*, a vivid crimson, was very noticeable for its tint; *Kalmia latifolia*, *Acers*, including *A. coratensis*, with green, palmate foliage; *Abies pungens glauca*, *Cupressus macrocarpa lutea*, *Nandina domestica*, *Mallotus japonicus*, variegated and tree *Hedera*s.

MESSRS. W. FROMOW & SONS, Sutton Court Nurseries, Chiswick, set up a large-sized group of Japanese Maples in great variety, the edging to the group being formed of pot plants of *Aralia pentaphylla variegata*. Among the Maples and in the front of the group well bloomed examples of *Lilium auratum* were arranged.

MESSRS. J. VEITCH & SONS, King's Road, Chelsea, exhibited a circular group 20 ft. in diameter of their choice hybrid *Aquilegias*, showing lovely shades of colour, and blossoms of greatly improved size. Dotted about in the group were very strong shafts of *Eremurus robustus* in various stages of development; and surrounding this group stood Bamboos, *Arundinarias*, tall and dwarf, in tubs and pots.

Mr. JOHN RUSSELL, Richmond Nurseries, Richmond, showed a well arranged group of hardy subjects in considerable variety. Amongst the plants were Tree Ivies, Japanese Maples, *Dimorphanthus mandshuricus foliis argenteis marginatis* in several examples; *Desfontanea spinosa variegata*, *Elaeagnus macrophylla*, *Ptelis trifoliata aurea*, Sweet Bays, *Robinia hispida*, &c.

MESSRS. WM. CUTBUSH & SON, Highgate, London, N.,

and Barnet, Herts, showed plants of a new polyantha Rose, obtained from Rosa Wichuriana crossed with Madame Gabrielle Luizet. The flowers are rich pink colour, passing to white, very attractive, and recommended as a good variety for forcing.

MESSRS. J. PEED & SONS, Roupell Park Nurseries, West Norwood, exhibited a group of attractive *Gloxinias*.

Awards.

FIRST-CLASS CERTIFICATE.

Asparagus myriocladus.—A densely-clothed species of a dark green colour. From Mr. R. GREENFIELD, Jun., 17, Bath Street, Leamington Spa.

AWARDS OF MERIT.

Iris Sunshine.—A flag Iris, having the lower petals yellowy-white, and the standards yellow. From Mr. G. YELD, York.

Rhododendron Lady Clementine Walsh.—A white flower, shaded pink. From Messrs. JOHN WATERER & SONS, Bagshot.

Iris orientalis, Snow Queen.—A good white form of the well-known *Iris orientalis*, and a good plant withal.

Sparaxis Fire King.—A most showy kind with crimson and black flowers of large size with golden centre. From Messrs. WALLACE & CO., Colchester.

Begonia Masterpiece.—A fine crimson self, certainly the masterpiece of self *Begonias*.

Begonia Miss Dorothy Hardwick.—Soft pink, a large flower of great size, orange or salmon shade, very remarkable in its great proportions. These were shown by Messrs. BLACKMORE & LANGDON, Bath.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), J. Douglas, H. J. Chapman, J. W. Odell, H. Little, F. A. Rehder, H. A. Tracy, W. Boxall, W. H. White, W. H. Young, N. C. Cookson, J. Charlesworth, J. Colman, H. M. Pollett, F. Sander, F. W. Ashton, H. T. Pitt, W. A. Bilney, and J. Cypher.

As at the Temple shows, so also at Holland House, the Orchids formed the leading feature. The fresh greensward on which the tents were erected helped in the effective arrangement of the plants, and was otherwise good for the many valuable specimens staged, and both the plants and the exhibitors of them were more comfortably accommodated than is usual at large shows.

The magnificent group of about 300 beautiful specimens, occupying about 350 square feet, staged by Messrs. SANDER & SONS, of St. Albans, will long be remembered by Orchid experts, those present generally conceding that it was, viewed from all points, the finest group of Orchids ever staged, and in which not a single plant unworthy of the show stand could be found. The method of exhibiting here adopted by Messrs. SANDER & SONS might well be adopted by exhibitors generally, many of whom utterly spoil the effect of their best plants by filling in with them almost every plant obtainable in flower. In Messrs. SANDER'S group every plant stood out by itself, the more prominent being raised on little hillocks of short green moss, a material which formed the setting of the whole group. Forms of *Odontoglossum crispum* were there in bewildering profusion. Connoisseurs hovered round the fine blotched and spotted varieties, but there were not wanting many lovers of plants, and especially ladies, who admired the pure white forms most. Of these, O. c. Mrs. H. G. Moon was a charming example, its large white flower being of perfect shape, the lip only bearing a horse-shoe belt of brown in front of the yellow crest. Of the finely blotched forms, many of which secured honours before the Orchid Committee, and will be found in the list of Awards, were O. c. Princess Alexandra, a beautifully-fringed and blotched flower; O. c. Duke of Connaught, a fine white, tinged with purple, and blotched with orange-brown; O. c. Imperatrix, O. c. Her Majesty, and O. c. Princess Helen, all of which three secured awards; O. c. Princess Marie, milk-white, blotched with purple, and a number of other fine spotted forms. At the back were fine hybrid *Laelio-Cattleyas* profusely flowered; forms of *Miltonia vexillaria*, remarkable for their large flowers and varied tints, though none were comparable with the large pure white *M. v. Princess Alexandra*. At one end of the group was a splendid plant of *Epidendrum prismato carpum*, with eighteen spikes; and selecting the most prominent in the body of the group we noted *Laelio-Cattleya Memoria Baroness Schroder*, a very

richly coloured flower; fine forms of *L.-C. x Canhamiana*, *L.-C. x Aphrodite*, *L.-C. x Henry Greenwood*, *L.-C. x Martinetii*, and other *Laelio-Cattleyas*, one of the prettiest being the fine white and ruby-purple *L.-C. x Our Queen*; *Cattleya x H. G. Selfridge* (superba *x Aelandiae*), a pretty rose-purple novelty; the new *C. x Prince Edward*; a pretty specimen of the orange-scarlet *Cochlidia Noezliana* with many spikes; the yellow hybrid *Phaius Ashworthianus*; some good examples of *Cypripedium Lawrenceanum* and other *Cypripediums*, and notable representatives of many other fine things.

Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), staged a very effective group, in which the varieties of *Cattleya Mossiae* and other *Cattleyas* and *Laelio-Cattleyas* were well represented. Of *C. Mossiae* were *C. M. E. Ashworth*, and *C. M. celestis*, both with a lavender tint; *C. M. Reinckiana*, *C. M. Wageri*, with three fine white flowers; *C. M. Pride of Ladysmith*, of the *Arnoldiana* class, and *C. M. fulgens*, fine in colour and shape. Of *Cattleya Mendeli* were *C. M. Nellie Wigan*, a very pretty variety; *Laelio-Cattleya x Canhamiana* bore eleven flowers; *L.-C. x C. marginata* and *L.-C. x C. Lady Wigan*, were both distinct; *L.-C. x Wiganiae* bore four fine flowers with bronzy sepals and petals, and claret and rose lip; *L.-C. x eximia*, *L.-C. x Hippolyta Langleyensis*, and *L.-C. x Arnoldiana*, were also fine. Two fine plants of *Sobralia macrantha alba* bore between them twenty-eight flowers and buds; *Laelia Digbyana* three flowers. *Odontoglossum x crispum-Harryanum* spectable, a fine spike; and some fine *Phalaenopsis* and other things were represented by cut spikes.

Mr. A. A. PEETERS, Brussels, showed cut flowers of *Laelio-Cattleya x Martinetii*, and a plant which was said to be a fine variety of it named "Coronation." A grand flower of fine form and shape.

MESSRS. HUGH LOW & CO., Bush Hill Park, staged a good group of *Laelias*, *Cattleyas*, &c., together with *Vanda Hookeriana*, *V. x Miss Joaquim*, *Cypripedium Lawrenceana Hycanum "Vanner's"* variety, *Laelio-Cattleya x Canhamiana*, *L.-C. x Pallas*, *Masdevallia muscosa*, &c.

MESSRS. STANLEY, ASHTON & CO., Southgate had an effective group of *Odontoglossum crispum*, *Laelia tenebrosa*, *L. Digbyana*, *L.-C. x Massangeana*, and other *Laelio-Cattleyas*. *Cattleya Mendeli Liptoni* was a charming blush-white, with purple blotch on the lip; and other things noted were *Thunia Bensoniae*, and some good *Cypripediums*.

MESSRS. CHARLESWORTH & CO., Heaton, Bradford, arranged a good group, in which their hybrid Orchids and good *Odontoglossums* were well represented. Good novelties were *Odontoglossum x Harryano-triumphans*, *O. x Alexandra Regina*, between *O. Schlieperianum* and *O. grande*; *O. crispum punctatissimum* Princess Maude, *Laelio-Cattleya x Lady Miller* in variety, *L.-C. x Canhamiana alba*, *L.-C. x G. S. Bull*; and in the group were many pretty and rare species.

MESSRS. JOHN COWAN & CO., Gateacre, Liverpool, showed a good group of *Odontoglossums*, *Cypripediums*, *Cattleyas*, *Laelias*, &c.

MESSRS. JAS. VEITCH & SONS, Chelsea, had a collection of forms of *Laelio-Cattleya x Canhamiana*, and other hybrids, and a very pretty large white *Cattleya Mossiae*.

MESSRS. FISHER, SON & SIBRAV, Handsworth, in their group had a large number of good Orchids, the gem being the finely-blotched *Odontoglossum crispum* Sir Alfred Milner, which will develop into a very handsome variety.

Mr. JAS. CYPHER'S artistically arranged group depended largely on the Orchids for the floral part, and many good things were included, the most effective use being made of all.

JEREMIAH COLMAN, Esq. (gr., Mr. W. P. Bound), staged a most interesting group all of fine quality, and containing a large number of fine species and varieties, *Oncidium macranthum*, *Masdevallias* and *Odontoglossums* being specially good.

Awards.

FIRST CLASS CERTIFICATE.

Miltonia vexillaria Queen Alexandra, from Messrs. SANDER & SONS.—A charming flower of immense size, pure white, with a slight tinge of yellow, and three small purple lines in the centre.

AWARD OF MERIT.

Cattleya x Prince Edward (*Schilleriana x Warscewiczii*), from Sir FREDERICK WIGAN, Bart., and Messrs. SANDER & SONS.—Sepals and petals purplish-rose, lip veined and tinged with crimson-purple.

Milvonia vexillaria gigantea, from Sir FREDERICK WIGAN, Bart. (gr. Mr. W. H. Young).—A fine flower, of uniform carmine-crimson tint.

Sobralia × *Wigania*, nat. hybr., from Sir FREDERICK WIGAN, Bart.—Sepals and petals yellowish, tinged with lilac; front of lip light rosy-purple.

Cypripedium Godefroyae leucociliatum, "Hessle variety," from W. P. BURKINSHAW, Esq., Hessle. Hull (gr., Mr. Barker).—A very fine yellowish flower, with the sepals and petals bearing a broad network of purple.

Cattleya × *Miss Harris* "superba" (Schilleriana × Mossiae), from STANLEY, ASHTON & CO., Southgate.—Sepals and petals purplish-rose; lip formed like *C. Schilleriana*, and of a glowing rosy-carmine colour, with darker veining.

AWARDS OF MERIT.

Zygostis × *Rolfeana* (Aganisia lepidia × Zygopetalum maxillare Gantieri), from Messrs. SANDER & SONS.—A pretty novelty of the general appearance of *Zygo-Colax*. Flowers whitish, mottled with violet.

Odontoglossum crispum Imperatrix Reginae, from Messrs. SANDER & SONS. Flowers fine, tinged with purplish-rose, with reddish-purple in the middle of each segment, the colour being shown up by a central white star round the column.

Odontoglossum crispum "Her Majesty."—Flower large white and of fine shape, from Messrs. SANDER & SONS.

Odontoglossum crispum "Princess Helen," from Messrs. SANDER & SONS. A pretty variety finely spotted.

Leilio-Cattleya × *Martinetti* "Prince Arthur," from Messrs. SANDER & SONS. Sepals and petals greenish-yellow, tinged with rose; lip dark rose, veined purple.

Odontoglossum × *Hartwegense*, "Princess Margaret," from Messrs. SANDER & SONS. A fine form of the plant known as *O. x lochristyense*, with milk-white flowers of fine substance, heavily blotched with red-brown.

Odontoglossum crispum "Princess Victoria," from Messrs. SANDER & SONS.

Odontoglossum crispum punctatissimum "Princess Maud," from Messrs. CHARLESWORTH & CO.—A noble flower of fine form, profusely spotted with purple, and tinged with lilac.

CULTURAL COMMENDATION.

To Mr. W. H. White, gr. to Sir TREVOR LAWRENCE, Bart., for a very fine plant of the remarkable *Maxillaria scurrii*, with many flowers.

Habenaria rhodocheila, with many spikes of orange-scarlet flowers.

Fruit and Vegetable Committee.

Present: W. Bates, James Smith, W. Crump, A. Ward, G. Norman, S. Mortimer, Ed. Beckett, Geo. Nicholson, W. Fyfe, A. Dean, H. Eslings, Geo. Wythes, Chas. Dixon, W. Pope, W. Iggulden, G. Woodward, H. Balderson, F. Q. Lane, J. Willard, A. Markham, Geo. Kelf, G. Reynolds, A. J. Wright, and Jno. Bateman.

From Captain CARSTAIRS, Welford Park, Newbury (gr., Mr. C. Ross), came a couple of seedling Melons, both from crossing Hero of Lockinge with Banquet. These were named Coronation and Baden Powell. Neither, however, was worthy of an award.

Mr. S. MORTIMER, Rowledge, Farnham, Surrey, had three seedling Melons—The Queen, from Royal Sovereign × Hero of Lockinge, very handsome, and Progress from the same cross, and Advancer. No award was made to either.

This exhibitor had a very fine collection of Tomatoes and Cucumbers, as well as some named Melons. The Tomatoes in boxes and dishes included Red Hipper 1st, Peachbloom, Holmes' Supreme, Red Dessert, Al., Peerless, Winter Beauty, Tender-and-True, Duke of York, Abundance, Eclipse, Best-of-All, Perfection, Magnum Bonum, Futurity, and Wonder of Italy, the two latter having huge clusters of smallish fruits. Of yellows there were Yellow Perfection, Golden Nugget, Sunbeam, Golden Queen, and Dwarf Gem, very pale colour.

The Cucumbers were in boxes, and included British King, that received an Award of Merit at the recent Temple Show. Express, long and very handsome, and Tender-and-True.

Mr. MEADOWS BROOK of Charsfield, sent a rather thick green Cucumber of no merit.

Messrs. T. RIVERS & SONS, Sawbridgeworth, had in one of the big plant-tents a very fine group of twenty-six Cherries, Plums, Peaches, and Nectarines in pots. The Cherries backing the group, generally fine trees, and heavily fruited, were Empress Eugénie, Guigne Annonay, Elton, May Duke, Belle Magnifique, Lewis de Burr, a huge tree with a splendid crop of fine white fruit, Frogmore Bigarreau, Early Rivers, and Governor

Wood. The Plums were Blue Black, Golden Transparent, and Curlew. The Peaches were, Princess of Wales, of huge size; Prince Edward, fruits good medium size, richly coloured; Duke of York and Early York; and of Nectarines, Cardinal, very fine and brilliant in colour, and Victoria, just showing colour.

Messrs. G. BUNYARD & SONS, Maidstone, had in the same tent a very attractive exhibit of Cherries and Apples. Of the former there were eighteen small but well-fruited trees in pots, and in the front small baskets containing picked samples of the varieties. Of whites, East Kent, Amber, Governor Wood, Elton Heart, Kirkland, and Frogmore Bigarreau were fine. Of reds, Mayduke, Archduke, Noir de Schmidt, and Belle d'Orleans; and of blacks, Early Lyons, Knight's Early, Purple Guigne, Roundells, Bigarreau de Schrecken, Ramon Oliva, and Guigne Annonay. Apples in dishes were Tibbett's Pearmain, Prince Albert, Wadhurst Pippin, Hornmead's Pearmain, Calville rouge, High Canons, Calville, Malingre, Wagoner, and Winter Peach.

THE COMPETITIVE ROSE CLASSES.

At one time it seemed as if there would be no Roses at all at the Holland House Show. The weather during May and June has been worse than any Rose grower has previously known it to be, and those who had cultivated their plants with a regard to the weather that might ordinarily be expected, and entered their exhibits under the same circumstances, have been grievously disappointed. At the same time, there is some satisfaction to be obtained from the fact that the weather for several days prior to the show was better than in the preceding days, and after all it was possible to have a show of Roses that included specimens in almost every class scheduled, though fewer and of less good quality than could have been wished.

AMATEURS.

Twenty-four Single Blooms, distinct.—A. HILL GRAY, Esq., Beaulieu, Newbridge, Bath, was awarded 1st prize in this class; but there was no other competitor equal to putting up a similar collection. His best flowers were Mrs. E. Mawley, Auguste Comte, Maman Cochet, The Bride, Anna Ollivier, Golden Gate, Catherine Mermet, White Maman Cochet, &c.

Twelve Single Blooms, distinct.—There was only one exhibit of twelve single blooms, distinct, and it was from the Rev. F. R. BURNSIDE, Great Stamburgh Rectory, Rochford, Essex. His varieties were Viscountess Folkestone, Marquise Litta, Antoine Rivore, Niphotos, Catherine Mermet, Souvenir d'Elise Vardon, La France, White Lady, Cleopatra, Marie Van Houtte, Mme. Cadeau Ramey, and Countess Caledon.

Six single blooms, distinct.—There were six collections of six blooms, distinct, the best coming from T. B. GABRIEL, Esq., Elmstead, Woking. General Jacqueminot was very bright in this stand, and Mrs. Ed. Mawley, Marquise Litta, and Rubens were pretty. The 2nd prize was won by R. W. BOWYER, Esq., Hertford Heath, Hertford.

The new rich apricot-coloured Lady Roberts was shown by Messrs. FRANK CANT & CO., their stand containing nine blooms.

OPEN CLASSES.

Forty-eight single blooms, distinct.—The only two collections of forty-eight blooms, distinct, came from Colchester, the 1st prize being won by Messrs. FRANK CANT & CO., Braiswick Nurseries; and the 2nd by Messrs. D. PRIOR & SON. In Messrs. CANT's stand the varieties were Mrs. W. J. Grant, Rainbow, Marquise Litta, M. Noman, Gustave Piganeau, Ulster, Rev. Alan Cheales, and Clara Watson. *Centre row*: Crown Prince, Caroline Testout, Lady Mary Fitzwilliam, Marie Baumann, Maréchal Niel, Dr. Sewell, Souvenir de President Carnot, and the new Lady Roberts. *Front row*: Mme. Gabrielle Luizet, W. J. Bennett, Bessie Brown, Mme. Montet, Grace Darling, Marie Van Houtte, Camoccos, and Souvenir de M. Eugène Verdier. Messrs. PRIOR's Roses were rather smaller, but there was an exceptionally large bloom of Maréchal Niel.

The 1st prize for twenty-four single blooms was won by Mr. GEO. PRINCE, Longworth, Berks, and there were some very commendable blooms in this stand, especially of Tea varieties. The whole of the varieties were Medea, Souvenir d'Un Petite Ami, Souvenir de S. A. Prince, R. M. Henriette, Viscountess Folkestone, Rubens, Caroline Testout, and another. *Centre row*: Exposition de Brie, Clara Watson, Grace Darling, Maréchal Niel, Captain Hayward, Hon. Edith Gifford, Comtesse de Nadaillac, and another. *Front row*: Mrs. W. J. Grant, The Bride, Maman Cochet, Catherine Mermet, La France, Marie Van Houtte, Duke of Teck, and Madame

de Watteville. Messrs. R. HARKNESS & CO., Hitcham, Herts, and Bedale, Yorkshire, were 2nd.

TEAS AND NOISETTES.

A. HILL GRAY, Esq., Beaulieu, Newbridge, Bath, was awarded 1st prize for eighteen single blossoms, and he had no competitors.

The best half dozen blooms of Tea varieties was shown by T. B. GABRIEL, Esq., Elmstead, Woking, his varieties being Rubens, Souvenir de S. A. Prince, Madame Lambert, and Niphotos. R. W. BOWYER, Esq., Hertford Heath, Hertford, was 2nd.

The best collection of six flowers of one variety was shown by A. HILL GRAY, Esq., showing Marie Van Houtte in moderately good condition.

In class 13, for eighteen single trusses, distinct (amateurs), Mr. GEO. PRINCE, Longworth, Berks, had a very fine lot of blooms. Judged by the majority of those staged on Tuesday, this stand contained superior specimens; and such were Maman Cochet, Medea, Madame Cusin, Souvenir d'Elise Vardon, White Maman Cochet, Princess of Wales, Anna Ollivier, Maréchal Niel, The Bride, Comtesse de Nadaillac, &c. Messrs. PRIOR & SONS were 2nd in this class.

Messrs. W. CURTIS & SONS, Highgate, showed a small group of the new Rose Dorothy Perkins, opening pink and changing to paler tints. It flowers in bunches and flowers endure for two months.

COMPETITIVE GARDEN ROSES.

Class 16.—GEO. COOLING & SONS, a nice lot of *Rosa rugosa* varieties, plenty of flowers, and cut at the right moment, 1st prize. Messrs. PAUL & SON, The Old Nurseries, Cheshunt, showed cut blooms in posies, and was chiefly notable for varieties of *R. rugosa*, several of which were very charming flowers: 2nd prize.

Class 18.—BEN CANT & SONS, The Old Rose Gardens, Colchester, showed Penzance Briar, Jeannie Deans, Flora MacIvor, Annie of Geirstein, Meg Merrilies, Lady Penzance, &c.: 1st prize.

Class 19.—This differed from previous classes in that greater variety was permitted. Messrs. B. R. CANT, Colchester, showed a very floriferous lot of bouquets, including Polyantha, rugosa, rubra, Wilsoni, some Penzance Briars, Austrian, yellow, Alpina, rose pink, pomifera, rugosa alba, simplex, and Crimson Pillar (1st prize).

Messrs. COOLING & SONS, North Street, Bath, showed Paul's Crimson Pillar, Austrian Copper, Austrian Briar, yellow Minna and Aecularis (2nd Prize).

Class 20.—In this class of nine China Roses, Messrs. F. CANT & CO. showed a pretty lot of Roses, some of them for many years favourites in gardens (1st Prize). Among them we noticed Queen Mab, Irene Watts, Favier, Fellenberg, Cramoisi Supérieure, Laurette Messimy and Common China (1st Prize).

Class 22.—In this collection of species of *Rosa*, Messrs. PAUL & SON, Cheshunt, were the only exhibitors. The heat so soon spoilt the flowers that we are unable to report on them.

Class 23.—New Tea Rose Souvenir de Pierre Notting = Maman Cochet × Maréchal Niel, a Niphotos-like bud, pinkish-cream, shown by Mr. G. PRINCE, Longworth, Berks. The parent Roses were shown alongside.

Class 24.—Miss BEATRICE LANGTON, Raynecad, Henden, showed a bowlful of crimson-coloured variety very pretty and showy, taking 2nd prize, the 1st prize being taken in the same class by O. G. ORPEN, Esq., Hillside, West Bergholt, Colchester, with Fortune's Yellow, and Lord Penzance.

Mr. G. PRINCE, Longworth, Berks, showed Briars in variety.

GROUPS OF ROSES.

Messrs. PAUL & SON, Old Nurseries, Cheshunt, were awarded the 2nd prize for a very interesting collection of the newer garden Roses. Mr. GEO. PAUL had to admit with something akin to pathos that it had proved very difficult indeed to get any Roses into bloom for this show. Among the novelties in this group were *R. sinica* "Anemone," a large and very pleasing single variety of a bright rosy-carmine tint; the new Weeping *Rugosa alba*, of a remarkable pendent growth, which it was said was this day awarded the Gold Medal of the Royal Horticultural Society; the new perpetual Rambler Purple East; Leuchstern, a new single Rambler, tipped with rose; Lady Battersea, Tea, in fine character, which Mr. PAUL said was the earliest double Rose to bloom at Cheshunt; the new Tea Rambler salmon-pink, with large flowers, the result of a cross between a seedling Tea and the Crimson Rambler, but with single flowers; Una, a semi-double white, the result of *Rosa canina* crossed with a Dijon Tea, a very chaste and beautiful garden Rose; in addition, several other attractive garden varieties.

The group shown by Mr. CHARLES TURNER, Royal Nursery, Slough, was awarded the 1st prize in Class 25, the special feature in this group being the beautiful standard plants of *R. Wichuriana*, such as Remy Andre, creamy-white tinted with pink, double; Anguste Barbier, soft pink, double; Alberic Barbier, white double; Paul Transon, creamy-white, double; François Foucard, delicate yellow. Of Polyantha types, Carmine Pillar, Leonie Lamesch, coppery-yellow; Eugénie Lamesch, Perle d'Or, very pretty; The Dawson, a cross between *Rosa multiflora* and a H.P.; the new pink Rambler, Queen Alexandra, pomifera, large pale rose; white Maman Cochet, the old De Meaux moss, Caroline Testout, Rugosa Lady White, Rugosa Crimson Damask, Mrs. W. J. Grant, &c.

Messrs. PRINCE & Son, nurserymen, Oxford, received the 1st prize in Class 25. At the back was a series of sprays of Reine Marie Henriette, and there were illustrations of Polyantha Aglaia, yellow and white; Belle-fleur, a hybrid Tea, single, crimson; Bardou Job, Amazone, Polyantha Claire Jacquier, white, with orange centre; Polyantha Thalia, Souvenir d'un Ami, Marie Van Houtte, Polyantha Euphrosyne, a pink sport from Thalia; Marquis of Salisbury, single crimson; Carmine Pillar, H. T. Billiard de Bairo, new yellow; the collection edged with Austrian Briar.

Awards by the Council.

GOLD MEDAL.

Messrs. Sander & Sons, for Orchids, new and rare Plants.

Messrs. J. Veitch & Sons, for Greenhouse Plants, Bamboos, and Aquilegias.

Mr. Jas. Cypher, for Decorative Plants.

Messrs. B. R. Davis & Sons, for Begonias.

Messrs. T. Rivers & Son, for Fruit Trees in Pots.

Messrs. Wallace & Co., for Lilies, Paeonies, Calochorti and Irises.

Messrs. Cuthbush & Son, for Flowering Plants and Clipped Trees.

Martin R. Smith, Esq., for Carnations.

SILVER CUP.

Messrs. Cannell & Sons, for Cannas and Aquilegias.

Messrs. Barr & Sons, for Hardy Flowers and Pigmy Trees.

Messrs. Carter & Co., for Gloxinias and Vegetables.

Messrs. Fisher, Son & Sibray, for Stove and Greenhouse Plants.

Messrs. J. Hill & Son, for Ferns.

Messrs. G. Bunyard & Co., for Pot Fruit Trees and Cut Flowers.

Messrs. Charlesworth & Co., for Orchids.

Messrs. J. Cheal & Sons, for Flowering Shrubs.

Mr. Amos Perry, for Hardy Flowers and Aquatics.

Messrs. J. Waterer & Sons, for Rhododendrons and Kalmias.

Sir F. Wigan, Bart., for Orchids.

Messrs. Blackmore & Langdon, for Begonias.

Messrs. Dobbie & Co., for Pansies and Aquilegias.

Messrs. Cripps & Sons, for Japanese Maples.

SILVER-GILT FLORA MEDAL.

J. Laing & Sons, for miscellaneous plants and shrubs.

H. B. May, for Ferns and flowering plants.

John Russell, for hardy trees and shrubs.

H. Low & Co., for Orchids and miscellaneous plants.

W. Fromow & Son, for Japanese Maples and Liliiums.

M. Pritchard, for hardy flowers.

J. Colman, for Orchids and stove plants.

J. Cowan & Co., for Orchids.

Stanley, Ashton & Co., for Orchids.

Sutton & Sons, for Gloxinias.

SILVER-GILT KNIGHTIAN MEDAL.

Mr. S. Mortimer, Farnham, for Tomatos, Melons, and Cucumbers.

SILVER FLORA MEDAL.

Messrs. Peed & Son, for Gloxinias and Begonias.

Messrs. Kelway & Sons, for Paeonies and Delphiniums.

Messrs. Jones & Son, for Irises and Sweet Peas.

Messrs. G. Jackman & Son, for Herbaceous and Alpine Plants.

Messrs. T. S. Ware, Ltd., for Herbaceous and Alpine Plants.

Mr. Reamsbottom, for Anemones.

Messrs. B. S. Williams & Son, for Hardy Flowers.

SILVER BANKSIAN MEDAL.

Messrs. Paul & Son, for Cut Flowers.

Mr. H. J. Jones, for Begonias, Pelargoniums, &c.

Mr. R. C. Notcutt, for *Arctotis grandis*.

Mr. A. W. Wade, for Hardy Flowers.

Mr. W. Icton, for Lilies of the Valley and Flowering Plants.

Mr. A. Watts, for Sweet Peas and Lilies.

Mr. Percy Waterer, for Sweet Peas.

Mr. W. J. Godfrey, for Oriental Poppies.

Mr. R. Sydenham, for Sweet Peas.

CHELTEMHAM MARKET GARDENERS' ASSOCIATION.

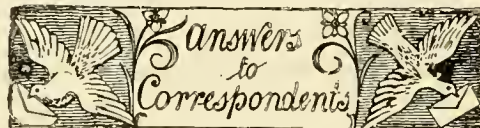
At the Lamb Hotel, Cheltenham, a largely attended meeting of market gardeners was held recently under the presidency of Mr. Thomas Smith. Mr. G. W. Restall said that a week previously it had been decided to form a market gardeners' association, to be called "The Cheltenham and District Market Gardeners' and Fruit Growers' Association," for the purpose of protecting its members in conducting their business legitimately; and to take cognisance of all matters affecting the prosperity of the trade and the well-being of its members, as well as establishing combination for the purchase of packages and other trade requisites. That meeting had been called to consider the proposed rules, elect officers, &c.

Mr. Charles Castle (Hon. Sec., pro tem.), read the draft rules, which were passed after considerable discussion.

The election of officers was then proceeded with. Mr. J. T. Agg-Gardner, M.P., was appointed President; Col. R. Rogers, V.D., Mayor of Cheltenham, Vice-president; Mr. Thomas Smith, Chairman for the year; Mr. G. W. Restall, Vice-chairman; Mr. Westcott, Treasurer; Mr. Charles Castle, Hon. Sec.; and Messrs. F. Parker (Prestbury), H. Shurmer (Leckhampton), Oakley (Bishop's Cleeve), John T. Smith (Elmstone, Hardwicke ke Swindon, and Tewkesbury Road), Albert Sindrey, James Cook, George Prude (Alstone, Arle, and Landfields), F. Sindrey (Rowanfield and St. Marks), and Taudevin (Reddings), the Committee.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

At the monthly meeting on June 9, four new members were elected, making a total of fifty-seven this year. The death certificate of the late Mr. J. N. Forbes was produced, and the amount standing to his credit in the ledger (£4 1s. 5d.) was directed to be paid to his nominee. Three members were reported on the sick fund. The amount of sick pay for the month was £9 12s.



. EDITOR AND PUBLISHER.—Our correspondents would obviate delay in obtaining answers to their communications, and save 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-SHOOTS FROM AN AGED TREE: A. B. Clavel. The shoots were crippled by cold weather, then a fungus attacked them, curling up the leaves, and lastly aphid came and multiplied exceedingly; such is the entire series of occurrences. The worst leaves should be cut off and burned, not thrown on the ground. Afterwards syringe the foliage with soap-suds, to which a pint of strong tobacco-water is added to three gallons, and well stirred together. Water at a temperature of 150°, or soap-suds with about a wineglassful of petroleum mixed in it, could be used against the aphid. If there are American woolly aphid, apply whale-oil soap after scraping down to the living bark all infested places, and bare the roots, and saturate the soil with soap-suds.

BUDDING FRUIT STOCKS: F. H. A shilling per hundred would be a fair price, if you must do the tying-in. The number inserted per day might be between 600 and 700, if you are very expert and industrious.

CARNATIONS: T. W. The plants are free from fungi and insects. The disease is due to some error of treatment; or probably excessive wet is the cause.

CUCUMBER LEAVES: A. B. The disease from which your plants appear to be suffering is extremely prevalent this year, and to

which the attention of our readers has been frequently directed by ourselves of late. We would advise you to peruse the section of the Royal Horticultural Society's Scientific Committee Report in *Gard. Chron.*, June 7, p. 382, headed "Melon leaves diseased."

DAMAGED LEAVES: Jamaica. A species of "red-spider." Apply flowers-of-sulphur dissolved as a thick paste in water, which afterwards thin by adding more water, and apply with a syringe to those parts, and the lower sides of the leaves, so as to completely coat them with sulphur. This should not be removed for some days. Afterwards frequent syringing of the plants in the evening will keep them clean. If the pests are not very numerous, copious syringing will usually clear the plants of them.

ONIONS: Smith, Wolverhampton. Eel-worm in the bulb is the cause of the Onions going wrong. Plenty of gas-lime must be worked into the soil, and allowed to remain for two months before being used for planting in. Soot and lime are of no use against eel-worms. G. M.

MALMAISON CARNATION: Doctriae. The colour of the flower sent is a very deep crimson, darker at the tips of the petals than lower down. No such deep-tinted flower has previously come under our notice, although there are several that approach it in colour. It is worth preserving.

NAMES OF PLANTS: W. Riddell. 1, *Anomatheca cruenta*; 2, *Lychnis diurna*. W. S. S. *Eutoca viscida*.—W. G. W. 1, *Codiaeum Laingii*, badly coloured; 2, *Williamsii*; 3, *Bergmanni*; 4, Prince of Orange.—W. H. 1, *Saxifraga hypnoides*; 2, *Polemonium coeruleum*; 3, *Centranthus ruber*; 4, *Anchusa italica*; 5, *Cytisus albus*.—Shrub. *Abies Nordmanniana*, so far as we can tell without seeing the tree or the cones.—No name (plants in cardboard box). 1, *Genista hispanica*; 2, *Crucianella stylosa*; 3, *Cerinth major*; 4, *Pernettya nueronata*.—W. B. *Hyoscyamus niger*, Henbane.—W. Dann. *Romneya Coulteri*, for fig. see *Gardeners' Chronicle*, February 27, 1875, p. 280.—X. Y. Z. *Lepototes bicolor*.—Y. M. 1, *Adiantum decorum*; 2, *Adiantum capillus-veneris*; 3, *Adiantum cuneatum*; 4, *Adiantum concinnum*; 5, *Pteris hastata*; 6, *Nephrolepis exaltata*; 7, *Nephrolepis tuberosa*.—F. G. G. *Cotoneaster affinis*.—J. W. Henbane, *Hyoscyamus niger*, certainly not a shrub!—No name. *Prunus Padus*, *Saxifraga hypnoides*. The Orchid is *Lissochilus streptopetalus*.

PALMS: W. B. T. It is a wonder the Palms have live so long as five months in a drawing-room. Is gas used?

PEARS: J. E. The larvæ of the Codlin-moth. See last week's number.

ROSE BLIGHTED: H. W. The plant made rapid growth, and subsequently was checked by cold weather; then aphid, as they always will in such cases, began to infest the injured shoots and the leaves, puncturing the latter on the undersides and causing the edges to curl inwards.

WINDOW BOXES: H. M. Oak is one of the best woods for garden tubs and window boxes, and Deal about the worst. Slightly char the interior of the boxes, smearing them with petroleum, as you suggest, and then fill them with dry shavings, which set alight. The charring should not go deeper than one-eighth of an inch. Keep the bottoms of the boxes or tubs off the ground or cills, and before putting any soil in the boxes, afford the outside a priming of red-lead paint, and over that two coats of green or other desired colour. They will last for a dozen years at the least.

. Owing to the derangement caused by the Coronation arrangements, many articles and replies are necessarily held over.

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



CYPRIPEDIUM CALLOSUM var. SANDERÆ, IN THE GARDEN AT NEW HALL HEY, RAWTENSTALL.

